

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



APRIL, 1883.

SEVERE STORMS, a low average temperature, and great floods are part of the record of the past winter. At the time of preparing our last number for the press but little was known of the extent of the ravages and disaster connected with the unprecedented flood of the Ohio Valley. It is unnecessary here to attempt any description of the ruin wrought all along the course of that great water-way, for the telegraph and daily journals, have at least attempted to portray it. Still, it is impossible yet to know of the extent of pecuniary loss, nor is the hand of desolation even now stayed, for the merciless waters increasing in volume in the Mississippi are at this time, March 8th, overspreading the valley, bursting levees, carrying with them consternation, suffering, and death. It would only be to repeat what we all know to give any detailed account of this scourge of our land. Many persons have been drowned, thousands of homes have been destroyed, tens of thousands of industrious workmen have been thrown out of employment; large areas of farming lands have had their loam and fertile soil washed away with everything that stood upon them, and barren desert only remains. Ohio, Kentucky, Indiana, and Illinois were the first to suffer, but the progress of the waters has made also Tennessee, Arkansas, Mississippi, and Louisiana to

feel its force and its power for evil. To follow all this, Death is undoubtedly stalking in the rear with his faithful attendants, Fever, Pestilence, and Poverty. We could wish that this calamity might prove to be less than its advancing shadow portends, but, oh, how inconceivable is the sorrow it has already occasioned! Our fellow countrymen are bestowing both sympathy and material aid. Let us hope for the future. The smaller streams through all this wide region referred to have also done serious damage. Perhaps but few of our readers have not by this time reflected upon the teachings of those who have given most attention to forestry, and have considered the evil effects resulting from deforesting great areas, and especially along the borders and head-waters of large streams. It may be doubted whether any tree-planting that might be practicable in the Ohio valley and about its source could have any great effect in equalizing the flow of water into its channel, but it is not doubtful that smaller streams may be controlled by such means. The legislature of this State has recently very wisely enacted laws to preserve the forests in the Adirondac region, where the Hudson has its rise. The action is not taken too soon, nor can it be too well enforced. A similar course with reference to many other streams might prove of great value.

JOHN J. THOMAS.

Among the elder horticulturists of this country none has probably done more, or more valuable, work than JOHN J. THOMAS, of whom a short account is here presented. He was born in 1810, at Ledyard, in Cayuga County, in this State. His father, DAVID THOMAS, a civil engineer, made the first survey of the Erie Canal,

and received most of his primary education while still at home. At an early age he exhibited an aptness for figures and mathematics, acquired the art of drawing and sketching, and gave considerable attention to the natural sciences, especially Botany, Chemistry, Geology and Mineralogy. At the age of seventeen he spent one season in the examination and study of native plants growing along the bor-



JOHN J. THOMAS.

and was a most efficient man, who in various ways promoted the interests of the country. The childhood and youth of the lad was passed at home on his father's farm and in the garden, where he acquired a knowledge of rural labors, and laid the foundation for his future usefulness by his association with nature, breathing fresh air, and developing a healthy physical system. At the same time, under the influence and partly by the careful training of his father, he re-

ceived most of his primary education while still at home. At an early age he exhibited an aptness for figures and mathematics, acquired the art of drawing and sketching, and gave considerable attention to the natural sciences, especially Botany, Chemistry, Geology and Mineralogy. At the age of seventeen he spent one season in the examination and study of native plants growing along the bor-

ders and in the vicinity of Cayuga Lake. A few years after he became interested in the cultivation of fruits, studying their habits and characteristics and determining their merits; and he soon began to give the public the benefit of his observations by contributing to the pages of the *Genesee Farmer*, of which journal he shortly became assistant editor.

In the year 1836, while a portion of his time was spent as a book-keeper in a bank, in Palmyra, of this State, he started

there a small nursery of trees, showing that the inducements of the counting house were insufficient to win him from his early and favorite pursuits. This venture in the bent of his inclinations soon led him into another, for the next year we find that he formed a partnership with W. R. SMITH, and the firm then founded a nursery at Macedon, Wayne County, N. Y. Mr. THOMAS continued in this business until 1856, when he removed to Union Springs, on the east bank of Cayuga Lake.

fruits previously unknown to him, and practically unknown in the country. These were planted on trial grounds to be proved. He soon learned that there was great confusion in the minds of cultivators in regard to the characters, qualities and nomenclature of fruits, as well as many mixtures in the trees themselves as ordinarily supplied by the nurserymen engaged in the business. With a determination to supply from his grounds only trees known to be true to the names under which they were sent out, he sys-



APPROACH TO RESIDENCE.

In the young nursery Mr. THOMAS found the opportunity to make practical application of all the information he had acquired in regard to plants, both by study and observation. His early training on the farm enabled him to become an expert and skillful cultivator, directing tillage, management of manures, and other operations with rare ability, and ensuring the success of his enterprise. With the assistance of his father, who had a wide acquaintance and correspondence, Mr. T. procured from many parts of this county and Europe a large number of varieties of

tematically planted trial grounds of every variety in his possession. His friends and associates considered this an impracticable dream, but the idea was cherished and put into practice until every variety was proved. As a result of this course at the commencement of his nursery operations, the number of varieties first offered for sale were comparatively few, but these he could confidently offer as strictly corresponding to the names and descriptions given in his first catalogue. This catalogue, Mr. THOMAS thinks, was the first one issued in this country with

descriptions, and little he thought that it would lead to the handsome volume now before the public, known as the *American Fruit Culturist*. The new nursery and its proprietors became widely known for reliability, and received for many years the public patronage so well earned. Mr. THOMAS continued his relation to the *Genesee Farmer*, as assistant editor, until its publishers removed to Albany and established the *Albany Cultivator*; with them he continued his work on the new monthly paper in the same relation, and

Mr. THOMAS, and the three or four thousand engravings contained in them were mostly drawn by him for the work. The *American Fruit Culturist*, already mentioned, was first sent out as a small volume of 18mo.; eighteen editions of it have been published, and from time to time it has been enlarged until it now appears as an octavo volume of nearly six hundred pages. Other volumes on agricultural subjects have also been given by him to the public. In view of his acquirements the degree of Master of Arts was



GARDEN SCENE.

from that time until the present he has occupied the post, seeing the monthly changed to a weekly and bearing its present name of *The Cultivator and Country Gentleman*. Through this medium the public has received from his pen, from week to week these many years, the most reliable teachings, especially in all that relates to fruit culture, and to horticulture generally. Besides this work the twenty-seven numbers of the *Illustrated Annual Register*, that were for so many years issued by the publishers of the *Cultivator and Country Gentleman*, were in great part written by

conferred upon him by Haverford College, of Pennsylvania.

The *American Fruit Culturist*, excellent in all respects, and which may be characterized by the one word, admirable, is distinguished from all other works on this subject by its method of classification of fruits; this method, simple and yet accurate is of great value, and is probably as near perfection as will ever be arrived at, as a systematic arrangement of cultivated fruits. It is manifestly the product of a mind trained to analytic and scientific thought. Mr. THOMAS, from early life, has been connected with socie-

ties for the promotion of agriculture and horticulture, but most intimately with the New York State Agricultural Society and different horticultural organizations in Western New York. The first of these, it is believed, was the Genesee Valley Horticultural Society, sometime in the forties, holding its exhibitions in this city, in which he did valuable service. Afterward the Western New York Fruit-Growers' Society was formed, and Mr. THOMAS was elected its first President, and held the office for a number of years.

Oakwood Seminary was founded through his labors, and he conducted its business for sixteen years as managing trustee, carrying the institution safely through two critical periods, when other and financially stronger ones failed and went down. The interest Mr. T. has in education is not narrow, nor does it arise from any selfish motives, it is genuinely good, and because he loves his kind. For a few years past he has urged the importance of improving and ornamenting the school grounds of our common schools through-



A SUMMER DAY.

After a time this Society changed its name and enlarged its field of work, and became what is now known as the Western New York Horticultural Society. The subject of our essay has been constant in good work here all these years, and was present as an active member at the session in January last.

He has also been an efficient member of the American Pomological Society from its first organization. From early life Mr. THOMAS has had a keen interest in the cause of education, and after removing to Union Springs, the well known

out the country, and this is what we might expect from one of his tastes and disposition, especially as we see, by the engravings here presented, with what skill he has planted and beautified his own grounds.

Socially, Mr. THOMAS is a genial, agreeable and entertaining companion. With an even and hopeful temperament he has always a pleasant smile, and is always ready to give or receive information, and especially always ready to assist those who may need assistance and encouragement. He is, in its best sense, a man of

nature, having all his life been in companionship with it, making it his study, giving it his most serious thoughts, and deriving much of his pleasure from it. The interests of horticulture directly, and through it the whole country are indebted to him for the results of his life-work far more than any of us can appreciate. May many years yet be filled with his quiet usefulness, teaching our youths by his example how beautiful and honorable is a pure life ennobled by self-culture.

A HANDSOME GRASS.

We are indebted to Japan for many useful, handsome and interesting plants; among them is one of which we now present a colored plate. The Zebra-striped *Eulalia* is a robust grass that grows from four to six feet high, forming handsome clumps. The representation of a full-sized section of leaf correctly shows its peculiar marking of buff, or straw color on a rich green. The flower heads have a pinkish shade at first, but when more fully developed become almost white, and change to a feathery lightness of form, as shown in the most advanced spike. If taken at this stage and preserved in the same manner as other grasses, the stems are quite ornamental and can be used with much effect in various kinds of decoration. The plant proves to be quite hardy with us, standing the winter without protection. It makes a handsome clump on the lawn, and there are many situations where it might be well employed to advantage. The name of the variety should have been given on the plate as *Zebrina*, not *Zebra*, the Latin and not the English form. As a companion plant to this there is another variety with similar habit of growth, *Eulalia Japonica variegata*. The leaves of this variety are striped along each margin with white; it is equally as hardy as the *Zebra* variety, and both plants growing on the same grounds enhance the interest in each other. They are not particular in regard to soil, and will flourish in any good garden or lawn. On the lawn it is best to keep the grass away from the clump for a foot or two all around, giving them exclusive use of the soil they occupy. A mulching of manure in the fall for a winter dressing will maintain their vigor and clearness of coloring. These plants have

as yet been very little disseminated, but are destined to become objects of beauty and attention on many of the best grounds.

A FEW HINTS.

Making new lawns and improving old ones should have prompt attention at this time. With new lawns the points to be observed are deep tillage, thorough working and pulverizing the soil, manuring until it is rich, making the surface smooth and even, and thick seeding with Grass seed alone. A dressing of lime and ashes, or of superphosphate of lime, will often be found beneficial to old lawns that fail to make satisfactory growth.

In transplanting trees and shrubs, examine the roots and cut them off above all broken and injured parts; and then be sure to prune the tops so as to remove at least, two-thirds of the last year's growth. This is given as a general rule, and usually there will be danger of removing too little rather than too much of the top. The Pines, Spruces, Firs, and similar evergreens, should not be pruned, except to remove some broken part.

Do not neglect the small fruits, but be sure and provide a generous supply for the family. Strawberries require to be set almost every year. Pinch back the ends of the Black Raspberry when the shoots are about two feet high and they will need little or no staking. See that plants of the red varieties of Raspberries are properly trained and staked, cut away any parts that may have been winter killed, and shorten the tops about a foot. As the young sprouts grow, cut away with the hoe all that may not be needed for the next crop. Do not make a new plantation of either Strawberries or Raspberries where an old one has just been removed. Do not neglect the Currants; no fruit will return more for the care given it.

Provide every new place with a few roots of Rhubarb and an Asparagus bed. Do not delay this for a more convenient season. Make everything clean, neat and trim in the orchard, and stand ready to fight insects.

The vegetable garden must have timely work in every part. Earliness is very desirable with many kinds of vegetables, and advantage should be taken in all practical ways to secure it.



SMALL FRUITS FOR HOME USE.

In going about the country you will find that where one person has Strawberries and Raspberries growing in the garden, twenty-five depend on the meadows and pastures for their supply of those fruits. That supply is generally quite small, for the fruit area is seldom very large for any neighborhood, and there is hardly enough "to go round." Berry-picking in the fields is hard work, and slow work, for wild fruit is small, and generally not very plentiful.

Why not have your berries growing in your garden?

Ask your wife about it, and see what she thinks. I know what her answer will be, if she is like most housekeepers who like variety in preparing food for the table. She will tell you that she has wanted a Strawberry bed for a long time, and a row of Raspberry bushes, and very likely some Grape vines, and I wouldn't be surprised if she thought it wisdom to set out some Cherries, or Plums. You like a variety of good things on the table, but you do not know, as your wife does, how hard it is to give a variety unless there are fruits and vegetables to be had. With them it is easy to make the bill of fare attractive. In Strawberry time, when the children are at school, she can pick enough berries from the garden in a few minutes to make a short-cake for tea, but if she had to go to the meadow for them you would probably have to go without short-cake, for she could not find time to pick them. And from a small bed you can raise berries enough to supply quite a family through the season with them. Our best varieties of Strawberries are enormously prolific. It is the delight of most housekeeper's hearts to have a good supply of canned fruits for winter use, and if you have a bed of Strawberries

in which grows more fruit than the family uses in its fresh state, be sure she will see that is not wasted. Next winter you will appreciate it.

Raspberries are very easily raised, and it costs but little to set a dozen or two bushes of the best kinds. These will surprise you with the amount of fruit they yield. It will be large in size, and fine in quality if you give the plants good rich soil to grow in, and keep them free from weeds or grass. The children can pick the berries after school, but they would not be likely to fill many cans for winter use if you depended on the supply they would gather in the pastures. Garden berries are handy, and that is much. The convenience of having them near the house is a great argument in their favor, if the crop they yield were no larger than those to be secured from wild ones.

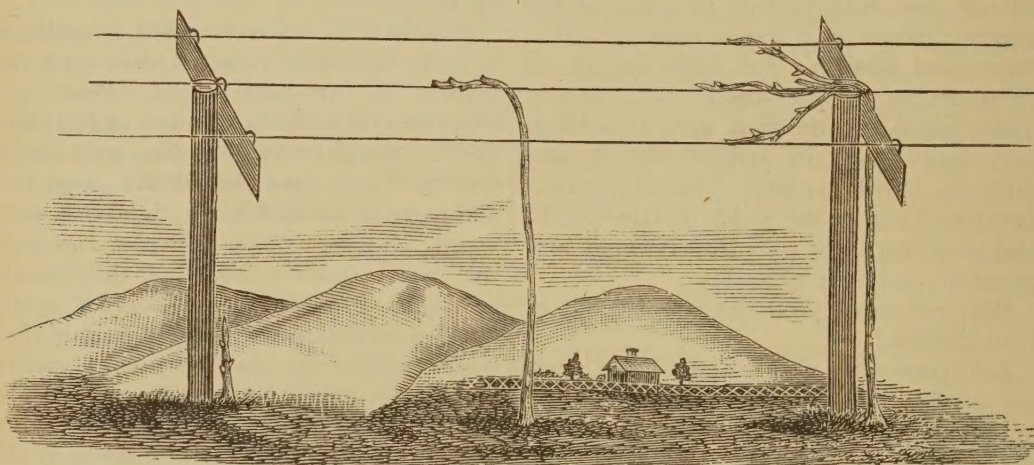
On a small piece of ground a large supply of fruit can be grown. Vines and bushes can be set compactly, and you can plant Grapes and Cherries and Plums in places where vegetable beds could not be made. Most gardens have only two things in the line of small fruits, Currants and Gooseberries, and these are generally neglected. A Currant, a Gooseberry, a Raspberry, or a Grape, cannot be expected to produce good fruit, or much of a crop of inferior fruit, when left to the tender mercies of the grass which is sure to attempt to crowd it out of existence. You must keep the soil clean and mellow and rich. You must remove dead and decaying branches, and not let too many grow. If you attend to these things you are reasonably sure of good crops yearly, and the cost of plants to stock a small garden is small. Very few persons need be without, if the cost of plants is all that prevents them from raising small fruits. The labor of caring for them is not great,

and does not require special skill and knowledge, as many seem to think. Raspberries, and Strawberries, and Currants are as easily raised as Corn. But the farmer doesn't fear to attempt raising Corn, for he knows, from long experience, just what to do to secure a good crop, under ordinary circumstances. The knowledge requisite to secure good crops of small fruits is as easily obtained as that which governs him in raising Corn, and can be depended on to produce satisfactory results. He will find that there is no more mystery about it than there is about Corn-growing, and that it calls for no more scientific training. With a sup-

A NEW VINE TRELLIS.

I send you herewith a pencil sketch of and description of my mode of training Grapevines. Posts five and a half feet high are set in the usual manner, the tops being spotted on one side upon which boards, five or six inches wide and three feet long, are nailed, representing a cross. On the tops of these boards are stretched three wires, one on either end and one in the center, and when done it is precisely the same as the pole, cross bar and three telegraph wires.

I think it better to plant the vines close to the post, and tie those planted between the posts directly to the wires. In this



VINES PRUNED IN SPRING OF FIRST, SECOND AND THIRD YEARS.

ply of Strawberries and Cherries, followed by Currants and Raspberries, and Grapes to complete the season's gifts, every family in the country can enjoy the luxury of plenty of fruit from June to November; and probably enough will have been "put up" by the housewife to last through winter. Most families pay out more for canned fruits in one season than it would cost to stock a small garden with plants of the best varieties, and the fruit we usually buy is almost always inferior to that put up at home; therefore, it is economy to have a garden of our own, and save the cost of canned fruits after a year or two, and the superior quality of home-prepared fruits makes them more truly articles of luxury and preservatives of health. Having once secured good varieties of any of the small fruits, there is no difficulty in raising young plants from them and enlarging the plantation, or renewing it when necessary. Only give them proper attention, and they may be increased as fast as desired.—R. F. D.

way the whole space between the vines is unobstructed for the passage of a team. A long string can be used for the middle vine when small. Branches are trained off from the top of the main trunk, one over the upper side of each wire; these may be pruned in the fall to any desired length, or they may be cut long enough to contain the same number of buds that are left on the four arms of vines trained according to the Kniffen system. The vines should all run in one direction to avoid tangling. But few branches will get off or hang from the sides of this trellis, as the vines will cling to the nearest object, and, if desired, these few can easily be thrown over the top.

The advantages, as I have found them, are: The clusters hang below the wire, not tangled with the wood and foliage, as in all other systems, and in a free circulation of air, and dry off quickly in the morning, which protects the bloom and prevents rot. Birds seldom creep down through the foliage to injure the Grapes,

and they cannot rest on the wing on the under side to do so.

If the Grapes are not cut until after frost the foliage protects the stems from becoming weakened by it, and I have discovered that the foliage remains green longer on these trellises than on vines trained according to the side plan. Vines trained in accordance with all the other systems have from four to five feet of foliage thrown to the wind; by this only about one foot. Then, again, the wind is allowed to pass under and over the trellis, and consequently it will stand a wind of double the pressure without being blown down that an upright trellis will stand.

I calculate it will cost ten dollars an acre for a season for hoeing under the wires in the ordinary way; on this plan

quently ruined, and, last but not least, the fruit is all ripened in the shade, and Grapes never ripen so early and perfectly in the sun.—A. J. CAYWOOD.

BOG GARDENS.

Some one has said, "the sweets of liberty can be best described from the confinement of a prison," and by the same rule, I, being "cribbed, cabined and confined" to about six acres of geometrically exact lawns, flower and kitchen gardens, ought to be in the best position to describe the delightfully weird wilderness of a bog garden.

The most suitable place, then, is by the side of artificial or natural water, and as an adjunct to an extensive pleasure ground. In such a place how restful it



VINES FOURTH YEAR, IN FRUIT.

the vineyard is cultivated both ways with a team, and a slow workman can keep up in hoeing the little spots left around the vines and posts. The setting of the vines ten feet apart would allow about six feet for air and light between the arbors, and if the practice of growing vegetables and Strawberries between the rows is continued, there is sufficient light and much more air than in the old system.

If there is anything in the new hanging-down system, which is being practiced here to some extent, which is to allow the ends of the annual growths to hang toward and on the ground, it can be done more effectually from these upper wires than on the plan of stretching one wire along the top of the posts, as that shuts the fruit from the air on each side.

I find that the Grapes are protected above by the foliage during hail storms. while on side trellises they are fre-

is to escape the strict forms and glaring blaze of the flower garden, to wander among nature's children in their own home. Any one who has never interested himself in this matter would be astonished at the long list of beautiful, curious and interesting plants that can be brought together, or how much can be learned of the inner-workings of nature and her wonderful secret in such a place as this. Let me describe some of them. First, in the water is the beautiful Nymphæa, the white Water Lily, so chaste in beauty, so delicate in perfume and so wonderful in habit and structure. Go down to the water some bright, sharp May morning, just before sunrise. You look in vain for the beautiful flowers you saw cushioned on the bosom of the water yesterday. Where are they? Wait awhile till old Sol begins to glow upon the water, and you will see bud after bud push above the

surface and unfold its fresh beauties to the eye. This water nymph doesn't like to leave her delicate beauty exposed to the chilling air of night, therefore she quietly draws the buds beneath the surface to repose.

Just examine the foliage of the *Ranunculus aquaticus*. You will find two distinct kinds of leaves, those constituted like the ordinary *Ranunculus*, and, beneath the surface, leaves that are much branched or divided and analogous to the branchiæ of fish, so formed to draw the gases from the water instead of the air. Then these grass-like leaves are the foliage of the *Valisneria spiralis*, the male flowers of which, when the pollen sacks are ready to burst, rise to the surface of the water and there distribute their fructifying grains which are carried down the stream to the stigmas of the female flowers, thereby rendering them fruitful. There is also the *Utricularia vulgaris*, which spends its life at the bottom of the water; but as the period of flowering comes on, the vessels that have hitherto contained mucus now become filled with an aeriform fluid rendering it lighter than the element in which it grows, and allowing it to float to the surface and display its beauties to the eye. There are also the *Potamogetons* in variety, and others which are exceedingly interesting, such as the Bulrush, *Typha latifolia*, Water Starworts, *Callitriche* or Arrow Grass, *Triglochin*, the *Alisma*, or Water Plantain, and many others. Then in the bog, alongside the water, can be put Iris, Callas, *Spiræas*, Water Hemlock, Mint, Forget-me-not, *Epilobiums* or Willow Herb, Water Dock, *Sphagnum*, Moss and many others, and still outward from the water we would have *Hypericums*, *Lysimachias*, *Droseras*, *Sarracénias* and the various Orchids, as *Listeras*, *Orchis*, *Liparis* and *Cypripediums*, and a good clump of *Caladium esculentum* and *Pampas Grass* to give boldness; then where ever there is the shelter of a shrub or tree, such Ferns as *Osmunda regalis*, *Onoclea*, *Pteris* of sorts, *Polystichum*, *Polypodiums*, and you will have a garden that for variety and quiet loveliness has no equal.

How refreshing it is to wander, even in imagination, in such a place; the soul revels in the calm, quiet beauty dis-

played; the very air seems to have an unearthly calm, and peace seems to make its home here. How refreshing it is to steal to such a spot after the toil and worry of the day. How it rests the eye, wearied by the bright glare of color in the more pretentious gardens, to look at the wonderful gradations of green here displayed; and after an hour spent in such a spot one goes away strengthened in spirit, soul and body, with a feeling of buoyant elasticity to begin the battle of life once more; and I am sure that as the quiet, restful beauty of this style of gardening becomes known it will be very popular.—W. H. WADDINGTON.

ROSES IN WINDOWS.

Very many of your readers continually complain of their want of success with Roses; they have often bay windows, and their temperature ranges about right, from 50° at night, to 75° to 80° during the day with sun.

What is the trouble? It seems to me that a few simple measures would, in many localities make a complete, or at any rate, a partial success. First, if possible, use a southern bay window and give it a glass instead of an opaque roof; shut it from the room with folding doors, which need only be closed during syringing or dusting operations, or for the purpose of bottling up a sufficiently moist atmosphere. The better to secure this, use boxes, say ten inches deep, instead of pots, the evaporation from the soil would be considerable and beneficial, or if pots are used, set them on boards, covered with an inch or two of clean sand, and keep it moist. Secondly, guard as much as may be against the dry atmosphere produced by stoves and furnaces. Thirdly, and above all things, guard against gaseous impurities; no plant suffers so much as the Rose from these; the coal gases known as sulphureted and carbonated hydrogen, are rank poison to the Rose, and they are invariably produced during combustion; these gases are nearly always collecting above the coal in the magazine of base burning stoves, and escaping into the room are the cause often, no doubt, for the poor health of Roses in the window, and the absence of Roses on cheeks, where Roses more frequently should be.—JAS. MACPHERSON.

WINDOW GARDENS.

Of late years the taste for window and balcony gardening has become so universal that we rarely ever enter a home of taste that we do not find an amateur garden and gardener. How cheerful and cozy even the gloomiest room may be made to appear when enlivened by a

gardens renders their management a little study. It is true, it is a difficult task to keep plants blooming in the house, unless some special provision is made to isolate them from the dry atmosphere of dwelling rooms; therefore, many lovers of plants prefer specimens having elegant foliage and graceful outlines to a few blooming plants. To obtain a pretty window it is best to pot off in September, and no special soils are really necessary but the leaf mold, or ordinary earth from the woods, or this mixed with some garden soil, and if that should be rather heavy, a little addition of sand.

My own window, here shown as it appeared this winter, is nine feet high. Probably the simplest, easiest and most desirable method of arranging a window to the floor is the following. A zinc lined box two feet square and the same in depth, is placed upon two zinc lined terraces, which are only one-half foot each in height; a water pipe conveys the water from all three. The main box contains a *Caladium esculentum* three and one-half feet high. The first or lower terrace should contain



MY WINDOW GARDEN. FROM A PHOTOGRAPH.

growth of plants, where each member of the household may exercise taste and spend a few spare moments in contributing to its beauty. This diversion grows so fascinating that each succeeding year brings its looked for window garden.

In order to produce a good display of foliage there must be some fixed system, and the increasing interest in window

the higher plants, as *Bouvardia*, *Heliotrope*, *Centaurea*, *Rex Begonia*, *Ferns*, *Tuberoses*, *Ficus elastica*, my alternate plants being *Tradescantia* and *Oxalis*. The second may have *Calla Lilies*, *Carnations*, *Cyclamens*, *Chinese Primroses*, *Roses*, several varieties, *Geraniums*, variegated and *Zonale*. *Coleus* are pretty to brighten up, but do not retain the lovely

autumn hues, too much heat and sunlight being required. Such creepers as Ivy and Smilax may occupy side brackets, from which may be suspended hanging baskets. The plants that have been mentioned are the principle ones in my window. The dark varieties of Heliotrope are the best bloomers. Carnations wanted to bloom in winter may be potted in September and kept pinched back. Oxalis and Cyclamen should be kept near the glass, to prevent spindling. Fuchsias should have a shady situation. Smilax needs but little sun, and can be run on strings. Callas should be repotted in August and kept well watered. Nasturtiums grow beautifully in water. Such a window when once started will be found but little trouble, and the pleasure far surpassing all the care. Twice a week will be found often enough to water the plants.

A shelved window at the south side I have devoted to bloomers and for propagating plants, and I think quite as pretty as the one given. In fact, flowers any where, at home or abroad, are the embodiment of beauty, and like angel spirits will shed sweet influence. They alike grace all occasions, peaceful, quiet, joy, or sorrow.

"Your voiceless lips, oh Flowers, are teachers,
Each cup a pulpit, and each leaf a book."

—MRS. DR. R. J. H., *Rutledge*.

DESTROYING INSECTS.

I notice in the December number of the *Gardeners' Monthly* a method of destroying insects under glass, invented by M. BOIZARD, of Paris, which consists in evaporating tobacco juice, by boiling, in the greenhouse. The vapor thus produced condenses on the plants in the form of dew, and so destroys the insects.

His plan is, no doubt, a very good one, though I like my old way the best, as being easier and far more expeditious. I use a decoction of tobacco, about the color of weak coffee, made by steeping tobacco stems, or refuse tobacco of any kind, in water, and with this freely syringe the plants affected by aphis, thrips, etc., and with me it never fails. I know that tobacco smoke is called the great remedy for green fly, etc., but I also know that when insects once get a foothold, unless the smoke is sufficiently dense and strong, and kept up long enough, to injure some

of the plants, it will not kill all the pests, and also that after being severely syringed enough of the green rascals will get over their first stupification by the smoke and subsequent dampening to crawl back on the plants and so trouble us again, leaving us the last resort of killing by hand those which the smoke and water have only sickened. To those of us who have many plants under our care this hand killing after fumigating is a severe task. For a person who is growing a mixed collection of plants the fumigating process is troublesome; and it is more or less dangerous for Heliotrope, Lantana, Smilax, Stevia, Eupatorium, etc., since they will surely suffer from smoke, unless first thoroughly syringed with pure water, and even then some will be injured. By using the tobacco tea only those plants which are affected need be syringed. Then, too, we all know it is anything but a pleasant job to watch the burning tobacco lest it flame up and scorch the plants, while the application of the solution is not at all disagreeable. On Roses it works especially well, for the dampness it produces is also disagreeable for the red spider. The solution is allowed to dry on the plants, and very frequently will prove fatal to a second brood before it is entirely syringed from the leaves. Another advantage is that the tobacco water will work into the soil, if enough be used, and if blue or ground aphis is working at the roots it will make the insects wish they had taken hold in some other place. Do not get the solution too strong; a little experience will teach the amateur just the strength required. I do not claim this as my invention, but simply wish to reverse the usual order given by those high in authority of "fumigate or, if not convenient, then syringe with tobacco water," and say to all my friends, syringe with the solution mentioned above, and let fumigation alone.—W. H. SPANGLER, JR., *Deerfield Centre, N. H.*

ECHEVERIA RETUSA.

The Retuse Echeveria, *E. Retusa*, is a very desirable and excellent winter-flowering greenhouse plant belonging to the natural order Crassulacæ, and is a native of Mexico, whence it was introduced in 1846 by Mr. HARTWEG. It is a dwarf growing species, attaining a height of one to two feet; the obovate glaucous leaves

are at first closely imbricated, but as the stem lengthens they gradually separate; they are broad at the point but acute when young, becoming blunt as they become old, and at the same time tinged with purple. The flower stem attains a height of from nine to twelve inches, and produces a large panicle of handsome crimson flowers, which are covered with a delicate bloom; the interior of the flower being of an orange color. Its flowering season is said to be from November to May, but I find that it occasionally produces flowers at all seasons of the year. As this species is a native of an arid, rocky section of Mexico it will, consequently, stand more neglect than many other plants, and on this account is very desirable for the window garden or for pot culture, as well as for decorative purposes. The plant requires a light, sandy loam, good drainage, and to be watered carefully at all seasons, and a temperature of 45° to 50°. During the summer season it can be turned out in a sunny situation in the flower border. Propagation is readily effected by the leaves, also by seeds, from which fine plants can be obtained in a short time if properly cared for. The seed should be sown early in spring, in a pot or pan of well drained light, sandy soil; sow thinly and cover slightly, and place in a warm temperature, and keep moist and as close to the glass as possible. When the young plants are strong enough to handle pot off into small pots, or into shallow boxes an inch or two apart each way, using light, fibry soil; keep the young plants close and moist until well established, then gradually expose them to the air and plant out when all danger of frost is over; or, if it is desired to retain them in pots, they should be repotted as often as is necessary. If planted out they must be taken up and potted before cold weather sets in. To propagate by leaves, remove the older leaves and place them thinly and as close to the ground as possible, in a warm, moist and shady situation. If the leaves can be placed in a shallow box containing light sandy soil, so much the better, but wherever they are do not disturb them in the least until they commence to grow freely. PAXTON gives the following account of its introduction: "It was raised from seed received from Mr. HARTWEG in February,

1846, the seed being supposed to have been collected on the rocks near Anganguco, Mexico."—CHAS. E. PARNELL.

SMALL SUBURBAN GROUNDS.

The accompanying plans for small grounds were designed for the vicinity of Philadelphia and southward, but by slight variation and substitution of a few kinds of trees, they may have a wide application.

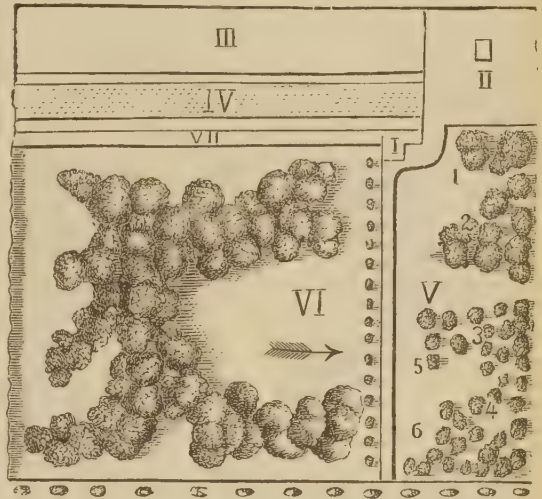


DIAGRAM A.

In the diagram A, the figure I represents the residence, II the stable, III the vegetable garden, IV a space devoted to small fruits and Grapes, V an ornamental orchard. Group 1 of this orchard consists of a tree each of English Walnut, Black Walnut, Shellbark Hickory, Butterwort and Pecan Nut, with an underwood of Filberts and Hazels.

Group 2 consists of a few trees of standard Apples, with some dwarf Apples among them to remain a few years.

Group 3 is a clump of Spanish and American Chestnuts and Chinquapin.

Group 4 consists of standard and dwarf Pears with Peaches intermingled, and Apricots Nectarines and Plums in foreground.

Group 5 represents Black Mulberry, Downing's Mulberry, Papaw and Persimmon.

Group 6 is composed of Cherries and soft shell Almonds.

Figure VI represents the lawn planted with a central group of small, flowering trees and shrubs, with a row of the best hybrid perpetual Roses along the walk.

Figure VII indicates a border of Mignonne and scarlet Geraniums, or mixed flowers.

The whole is to be surrounded with a hedge of Hemlock or Norway Spruce.

Diagram B shows, I the residence, II conservatory, III gardener's house, IV stable, V vegetable garden, VI fruit garden, VII lawn with deciduous ornamental trees and shrubs having flowers with sepals and petals of several parts, and relieved by Spruces and sub-tropical plants

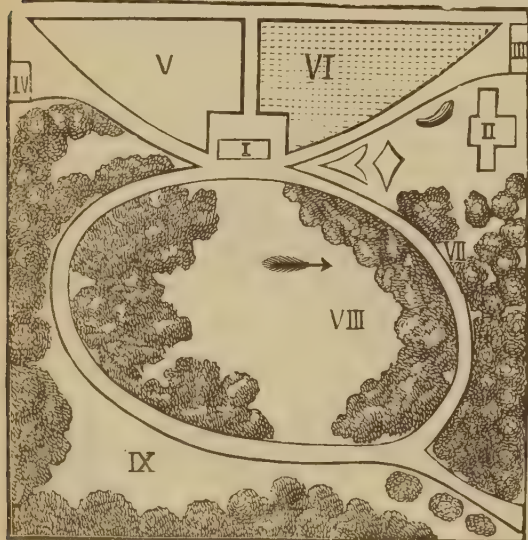


DIAGRAM B.

and flower beds; VIII, the central ground, is planted with trees and shrubs bearing flowers that are one petaled, like the flower of the Morning Glory. Prominent among the shrubs would be the Rhododendrons, Azaleas and Kalmias; less showy, but still beautiful would appear the Snowberry, the upright and the twining Honeysuckles, the Weigela, Sambucus, Viburnum, Holly, Trumpet Flower, Forsythia, Lilac, White Fringe Tree and many others. The larger trees might show specimens of Catalpa, Paulownia and several kinds of Ash; mingled with these could be different kinds of Cypress. The remaining border, IX, is planted with trees and shrubs more prized for other characteristics than for their usually inconspicuous flowers. Among them may be mentioned the native and other nut trees, Elms, Mulberries, Willows, Poplars, Beeches, Birches, Oaks, Alders, Hornbeam, &c. And of shrubs, the Hazelnuts, Eleagnus, Shepherdia, Daphne, Dirca and some other kinds. The angle of this plat, near the house, can contain Yews with Salisburia a little back of them. The feature of this place, it will be noticed, is the planting of the groups in naturally allied plants.—J. MCPHERSON.

A PROTEST.

"Fussy," indeed! I repudiate the epithet with contempt; just because people don't know how to treat me properly, and yet will persist in meddling with my affairs; they must set themselves up for judges, forsooth, and then, if I don't do just what they expect from me, they call me the undeserved name at the commencement of my paper. If I were inclined to be unladylike, I might fling their opprobrious epithet back upon themselves; but I forbear.

I am sure, dear Editor, you don't call our family fussy! You have no trouble with us at Rochester, simply because you treat us, as every lady has a right to be treated, with courtesy and loving-kindness. Just imagine, my being brought into the hot, dry, atmosphere of a room, sometimes where there is one of those great ugly health consumers, called self-feeders—very appropriately named, I think—for they certainly do *feed themselves* with all the vital principles in the atmosphere, leaving nothing but unhealthy poisonous gas for every one else, (I heard some one call them "*base burners*" one day, and they are base enough, dear knows.) Fancy, I say, my breathing an atmosphere as hot and dry as a lime kiln, and cease to wonder, except it be that I am still alive. You know, dear friend, if there is one thing that disagrees with me more than another, it is a hot, dry, vitiated atmosphere, and then my lungs are choked up with particles of coal dust, ashes, and other abominations; and I never get a bath, week in and week out, never even so much as a sprinkle over head, never a cup of that rich, nourishing soup that our family are so used to, and, in fact, that has become a necessity for our well-being; and, really, dear friend, I sometimes wish I were dead (and I know that is wicked), instead of lingering on for months in a slow miserable consumption. Now I am sure, Mr. Editor, you can endorse what I say: I am neither exacting, nor hard to please; I simply need a daily shower bath, a good bath once a week or so, *summer heat* by the thermometer, strong plain diet, with a dish of nourishing soup once or twice a week. If I should get this treatment I would fill their rooms with perfume and loveliness, especially if I were allowed to camp out in the sun

during summer, and my tresses shingled back to my two eyes, then when the nights got cold and frosty brought into the house, I am sure your lady friends instead of using hard names would be delighted with, yours faithfully.—ROSA.

CHICORY FOR WINTER SALAD.

I think salads are more highly prized in winter and in early spring than at other times, and this is a season when they are most costly; in fact, usually only those in easy circumstances can freely enjoy this luxury. In the Northern States Lettuce cannot be had in the months of December, January, or even in February without a special place to grow it in. A cool greenhouse is about the only place quite suitable for it. In February and March hot-beds can be employed for raising it and other salads by those who may have such resources at command, but how few, comparatively, are these!

Chicory is a very good salad, and one that can be had by everybody. Any one who has a small garden and can spare a



CHICORY BLANCHED, READY TO CUT.

little spot in it to sow a few rows, or make a small bed, has all that is necessary to raise Chicory. Sow the seed in the spring at the same time that Carrots or Parsnips are put in, cultivate clean, take up the roots in the fall, when other root crops are lifted, and store them in the cellar. Now, if salad is wanted about Christmas, the roots should be potted. Large flower-pots, nail kegs, flour barrels cut in two, boxes or tubs of most any kind will answer the purpose if they are deep enough to allow the roots to go down through the soil. A very large flower-pot would hold nearly a dozen

good roots, a large box or tub would hold, perhaps, two dozen. The roots can be put in to grow at intervals of one to two weeks all through the winter, as the tops may be consumed. To have the leaves nicely blanched they should be grown in a place nearly dark; a warm cellar is a very good place, a warm closet, or any warm corner where 50° of heat can be had, will do. Give water when the roots are first placed in the soil, and afterward as may be needed, not allowing the soil to become dry. The leaves grow very rapidly borne on their long cream-colored stalks, which are unsurpassed as a good salad. A trial of this method will convince any one of its value. At the present time (February 12th) I have some growing; some are in the cellar at the back of the furnace, growing in large flower-pots, and some in nail kegs, and they are doing well. I placed them there the middle of January, and commenced to use them about ten days ago. I have some more growing in the greenhouse in pots, and, as it is very light and airy there, I place a flour barrel upside down over each pot to exclude the light; for the more the stems are blanched the better the salad.

One might think the Chicory plants in the greenhouse would make a much quicker growth than those in the cellar, but that is not the case; I do not see much difference. The taste of Chicory is much like that of Lettuce, perhaps a little more bitter; almost every one that likes Lettuce would like Chicory as a salad, for, like Lettuce, it can be made to suit the taste with the dressing.—R. G.

THE TIMBER QUESTION.

Now that the question is settled that timber culture is profitable, and in fact a necessity on our western prairies, we ought to know just what sorts will best suit each location. Here, in Northern Kansas, the Cottonwood is by far the most rapid grower, and where a protection from wind is required, should be first on the list. Plow up a furrow or ridge as for Sweet Potatoes, and stick the cuttings in a foot apart, all slanting the same way, leaving only about a bud or two above ground. If the weather should be hot and dry they should be mulched the first year. If the weeds are kept down two years they need no more cultivating. In

four years you may take out the small ones and plant them somewhere else, or burn them for wood; then, if you need a fence, fasten your barbed wire on the largest ones remaining, and you have it. Soft Maple makes excellent firewood. It has a habit of sending up a number of shoots, and they all grow to about the same size. By cutting out all but one or two in a place a small grove will yield several cords of wood. Box Elder is a still slower grower, but is a beautiful tree, and one of the earliest to leaf out in the spring. The seed should be planted in the fall. The Soft Maple seed ripens in May, and must not get dry or the germ is killed, but must be planted at once. The Elm is so slow that we have only tried a few. Walnuts will do if you can afford to wait some time, and the result will be satisfactory in the end. Gray Willow makes a quick hedge, and there are many miles of it in this part of Kansas. Osage Orange also does well and is a grateful shelter from the winter. Travelers over the prairie are glad to reach a road bordered with a hedge or row of trees. One of our neighbors cut down a few rods of Osage hedge last fall and got his wood for the winter. He says it is splendid wood, and his hedge will come up thicker and better than ever for being so treated. The Red Cedar grows along the banks of the creeks, and when transplanted to the prairie makes a splendid wind-break and gives a cheerful look to the farm in winter. We have between forty and fifty noble trees that we would not take five dollars apiece for and have them removed. We have a few imported evergreens, and intend to try some Larch this year. Without naming all the varieties we have growing, I will say that those named are the main kinds, and I think the most valuable.—MRS. E. SHEDDEN, *Barrett, Marshall Co., Kan.*

CALLA PALUSTRIS.

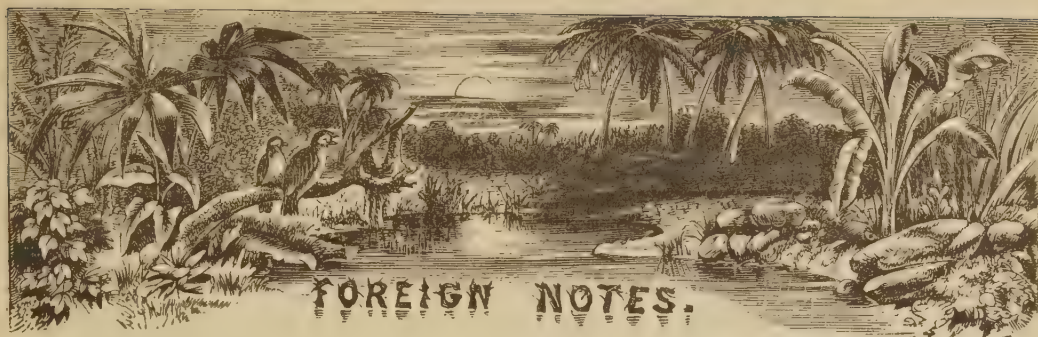
The *Calla palustris* (Gr. *kallos*, beauty, and *L. palus*, a swamp), a member of the Arum family, is an almost exact reproduction in miniature of the large *Calla* or Egyptian Lily, and for this reason, as well as on its own account, may claim a brief notice in the MAGAZINE. It is found wild in cold bogs in almost all northern countries. In this neighborhood it grows luxuriantly in a small swamp with peaty

bottom and the water nearly black. It is from six to seven inches high, has heart-shaped parallel-veined leaves, and a long creeping rootstock or rhizome, flowers in June, and the seeds when formed are surrounded by a jelly-like substance with the clearness and almost the brilliancy of the diamond. It is said that the Laplanders prepare a kind of bread from the rhizome by a tedious process, which includes drying, washing, grinding and baking. The flower, so called, is really a spathe or modified leaf (bract) with the spadix of flower occupying its centre. It is generally white above and green or leaf-like below. In the cultivated *Calla* this so-called flower sometimes reverts partially to the original type, and becomes green like the leaf. The *Calla palustris* is an interesting plant, and will well repay careful examination and study.—C. Y. M., *M. B., Brampton, Ont.*

MY PASSION FLOWER.

My Passion Flower grew nicely in the house all winter, and early in June I set it out in the garden, where it begun to run at a great speed. The plant being about five feet high I set up a pole to tie it to, and at a distance of fifteen feet I set three more in a triangular form, fifteen feet each way and run a good strong cord from the angles to the center and from the center to a window in the second story of my house, and gave each cord a branch. By the end of the season the whole thing was completely covered. There must have been over a hundred feet of vine, and what an array of blossoms! It was a beautiful sight and attracted visitors all summer, who could only exclaim, wonderful, beautiful, large as a Grape vine, I never saw any thing like it, and please may I take a blossom. An old German who came to see the wonderful plant, exclaimed, "It ish magnif-e-shent! Can I haf a flower und a shlip for mine vife? O, muder vill pe so proud, she am a great vriend of flowers." It was a fine sight, and has left a memory of beauty and satisfaction. As some may not know, I will say it was *Passiflora cœrulea*.—WM. W. B., *Glenwood, Mass.*

CORN IN HOT-BED.—I started Sweet Corn in a hot-bed last spring, planted it out early, watched it and protected it, and got Corn two weeks earlier that way.—H.



VINE MILDEW.

A correspondent of the *Florist and Pomologist* in an article on the American Vine Mildew, *Peronospora viticola*, gives a good description and account of the growth of this injurious fungus. The presence of the *Peronospora* in the European vineyards seems to have been first observed in France in 1877, on the numerous vines which, in consequence of their supposed phylloxera-resisting virtues, had been imported from America; in 1879 it was discovered in Upper Italy; in 1880 in Switzerland and Hungary, in Carniola and the South Tyrol, and in Lower Austria, causing much damage wherever it appeared. In 1882 it had invaded the German empire at Alsace and Bavaria.

"Many remedies applied to other vine diseases have been tried in vain against the American mildew. But the application of a powder consisting of 4 kilogrammes of pulverized sulphate of iron (green vitrol), mixed with 20 kilogrammes of pulverized sulphate of lime was very successful. In a plantation sprinkled with this mixture on the 2d of July, the young shoots did not suffer, but the spots of disease blackened and the leaves became intensely green. The success of this experiment was the more remarkable as the vines were between two sets of diseased vines which had not been similarly treated. Another plantation vigorously attacked by the mildew, was, on the 24th of September, sprinkled in a similar manner, and also cured, but in this the young shoots and tender leaves were blackened, possibly by reason of the abundant rain which would quickly dissolve the vitrol, while at the July application the weather was hot and dry, and the vitrol would be dissolved more slowly. Hence it would appear that in order not to injure the

young leaves and inflorescence it is necessary to apply the remedy in dry weather."

HOT BATH FOR INSECTS.

A German method of destroying thrips and red spider is to have a large vessel filled with clean hot water at a temperature of 133° F. The infested plants are dipped into the water for the space of four seconds, when the insects will be killed, and no damage result to the plants; it is best not to continue the immersion longer than the time noted. If afterwards a few insects appear that have developed since the operation it may be repeated. The temperature of the water should be watched, and not allowed to fall below 122° F. It is said that even young shoots and flower buds will not suffer in the least from this treatment.

SAP PASSAGE.

Until recently it was supposed that, with few exceptions, the cells or membranous bags of which plants are composed were closed, and that no passage of their contents through the cell-wall took place except by filtration or imbibition. Lately, however, Mr. GARDINER has shown that fine threads of protoplasm do in some cases, as in the Sensitive Plant, *Mimosa pudica*, pass through the pits of one cell into those of neighboring cells. Mr. F. DARWIN noticed something analogous in *Dipsacus*.—*Gardeners' Chronicle*.

EARTHWORMS IN POTS.

Account is given in *Revue Horticole* of spirits of camphor, much reduced with water, and applied to the soil of pot plants containing earthworms; the earthworms were destroyed and the plants not injured.

HERBACEOUS PERENNIALS.

How to arrange herbaceous perennial plants in the garden so as to produce a satisfactory effect has always been a puzzling question. These plants vary so greatly in their habits of growth, time of flowering, manner of bloom, as well as in many other particulars they frequently

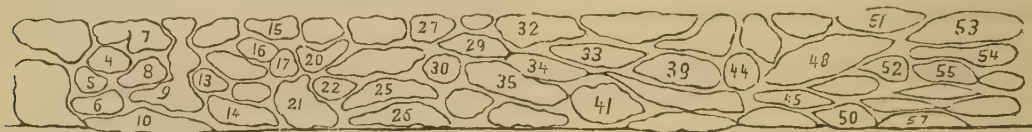
published a short time since in the *Garden*, and from them our engravings have been prepared. It is intended by them to show the condition of a border of herbaceous perennials through the three seasons, spring, summer and autumn, but of course no close lines can be drawn, and some kinds are even in bloom



SPRING.

present in the mixed border an incongruous assemblage. Partly on this account these perennial plants, with the exception of a dozen or a score of them, have been greatly neglected for some years past; but their beauty and interest will not allow them to be lost, and a new interest is manifesting itself in regard to their culture. It may not be necessary

more or less at all seasons. It is evident that groupings of this kind can be varied almost infinitely according to taste or necessity. The border here shown is about eighty feet in length and nine wide. A border of six or seven feet will probably be more frequently employed. This method of planting has been practised a little for several years, and is growing in



SUMMER.

to say that by any arrangement they cannot occupy the foreground; this some of the most showy annuals, plants with variegated foliage, and what are known as flowering bedding plants, and sub-tropical plants, will continue to hold. But in a flower garden of any extent the herbaceous perennials must hold an important and interesting position, and with the necessary care who can doubt that an effective display may be made with

favor; a bed only five feet wide on our own grounds, planted in this manner three years since, has given good results and impressed us very favorably, and we have, therefore, no hesitation in saying that on many accounts this is a superior method of disposing of these plants.

The following is a list of the plants indicated by the figures in the diagrams:

1. Michaelmas Daisy.
2. Anemone Sylvestris and Anemone Pulsatella.



AUTUMN.

groups of Lilies and Peonies and Larkspurs, Dicentras, Japan Anemones, Perennial Phlox, Pansies, Violets and the multitude of others of the same class. The many outlines in the diagrams here presented represent irregular masses of plants, and these are arranged with reference to color, height, time of blooming, and harmonious effects, so that the borders will appear attractive from early spring to late in fall. These diagrams were prepared by a correspondent and

3. Leucanthemum maximum.
4. White Phlox.
5. White Fraxinella.
6. St. Bruno's Lily.
7. Purple Monkshood.
8. Galtonia (Hyacinthus) candicans.
9. Campanula Carpatica, C. pyramidalis, and C. persicifolia.
10. Achillaea Clavennæ and C. umbellata.
11. Perennial Lupine.
12. Iris pallida.
13. Statice latifolia.
14. Pansy.
15. Verbascum vernale.
16. Coreopsis lanceolata.

17. *Helianthus rigidus*.
18. *Rudbeckia Newmanni*.
19. Double Perennial Sunflower.
20. Globe Thistle.
21. *Cenotheras*.
22. Pot Marigold.
23. *Helianthus giganteus*.
24. Yellow Day Lily.
25. African Marigold.
26. *Nasturtium*, orange and yellow.
27. *Thalictrum*, white and yellow.
28. Tiger Lily.
29. *Iris ochroleuca*.
30. *Gaillardia*.
31. *Sedum spectabile*.
32. Salmon, Crimson, and Scarlet Phlox.
33. *Lobelia cardinalis*, and *Gladiolus Brenchleyensis*.
34. Scarlet, Opium, and French Poppies.
35. Scarlet and Pink Pentstemons.
36. *Phlox setacea*.
37. *Tritomas*.
38. Perennial Poppies.
39. Scarlet *Lychnis*.
40. German Iris, brown, deep and pale yellow.
41. Scarlet and Crimson Sweet William.
42. *Cheiranthus*.
43. Red Wallflower.
44. Scarlet Balm.
45. Sulphur Pansy.
46. Yellow Alyssum.
47. Great Ox-eye.
48. *Spirea venusta*, *S. Aruncus*, *S. palmata*.
49. *Polyanthus*, deep and pale yellow.
50. *Cenothera macrocarpa*.
51. *Cenothera Lamarckiana*.
52. *Eryngium amethystinum*.
53. Double, and pale blue *Delphinium*.
54. White Lily.
55. *Acanthus*.
56. *Gentiana asclepiadea*.
57. *Myosotis dissitiflora*.
58. Yellow Violet.
59. *Gentianella*.
60. *Plumbago Larpentæ*.

For our country and for different parts of it the places of some of the plants in this list can be better filled with others.

CHRYSANTHEMUM NOTES.

A correspondent of the *Garden* writes: "To-day I hear whispers that American amateurs have mastered that little secret of saving *Chrysanthemum* seed, so that we may expect them to rival France and the Channel Isles in the way of new seedling *Chrysanthemums* as well as in bulb and fruit culture. *Vive l'Amérique!*" Noticing the *Chrysanthemum* still further he continues: "Here are a few extracts which may be of interest. Mr. FORTUNE told us long ago that the Chinese made life-sized images of their blossoms, but who would suspect the 'moon-faced celestial' of liquor. And yet we are told that 'in China a liquor is distilled from the flowers of the *Chrysanthemum*, which

is regarded as an elixir-vitæ, and in the Chinese pharmacopœa a powder of the flower or florets dried is prescribed as a cure for drunkenness.'" The practice here described we have never known to be tried in this country, and we trust some of our amateurs may attempt it this season and succeed: "Grafting two or three varieties of *Chrysanthemum* which bloom simultaneously on one stock, if not yet a general practice, is sufficiently so to warrant some notice. In 1876 and 1877 Mr. CHARLES TURNER adopted this mode of culture, and in the latter year he had over 200 fine plants worked as standards on three feet high stems, several sorts which bloom at the same time being grafted into one hand. At Oxford also this grafting practice is pretty general, as we learn from a visitor at the *Chrysanthemum* show recently held in that city. Long ago, indeed, Mr. FORTUNE found Chinese gardeners employing *Artemisia indica* as a stock on which they engrafted their *Chrysanthemum*."

PROPAGATING CLEMATIS.

T., in the *Garden*, writes: "The usual method of propagating these is by grafting a young shoot on a piece of root of the common kind, that is so far as concerns the ligneous species, the herbaceous ones being of course increased by division. Those for which grafting is employed can also be multiplied by means of cuttings made of the half-ripened wood put in during the summer months; but the most successful way of striking them if the plants are in pots is to put them in a growing temperature about February, when the young shoots will push forth in abundance, but in a somewhat weakly condition. These shoots if taken off readily strike root. The principal thing to guard against is damping off; but when once they have formed roots the danger in this direction is then over. When struck the cuttings must be allowed to have more air than hitherto, and as soon as possible they should be potted off. The advantage of striking thus early is that a long season of growth is thereby secured.

THE *Laurestinus* is used in England for hedges in gardens, and is very ornamental, producing its white flowers in great abundance.



PLANTS DIE IN THE HOUSE.

Having been a reader of your MAGAZINE from its beginning, we have been greatly interested in the annoyances of those cultivating plants in-doors during the winter months; "misery loves company," and we have endeavored to profit by their experience and failures. The plants do well enough in the garden for us, but in the house that is altogether another thing; we try your correspondents' remedies, but fail. One year, we tried Fuchsias, in the fall they were fine, but by spring there was not enough vitality to call them alive. Next year, we tried Roses and Geraniums, and most of the Roses departed to be no more, and the Geraniums did not get over house-culture during the entire summer and fall. This year, we tried bulbs, Oxalis and Narcissus. It is said the oyster is able to digest itself; the plants of the Oxalis are evidently swallowing themselves. Polyanthus Narcissus advanced a little, but no longer seems ambitious. Friends suggest remedies, we try them, we water and then leave them for a while unwatered, we move the plants from garret to cellar, stopping at all intermediate places, we move them from south to north exposure and back again; one says too hot, another too cold, too sunny, too shady, too much gas, both illuminating and stove, atmosphere too dry, too moist; doing every thing for the darlings, we watch them anxiously, but they dwindle. Our neighbors neglect their plants, yet they grow. Our luck does not tend to vegetation in winter, for us at that season no flowers bloom. I think we shall change our tactics and buy plants in bloom, that is the artificial ones potted, they always flower and are always green, no source of wearing anxiety; care we do not speak of, for who would mind that if the plants thrive? There is a joy in their growth and a pleasure in their bloom not expressible. We might ask help of you, but when the wise ones of our place, acquainted with the facts, fail, what can we expect of distant Rochester, knowing nothing about our house? We long for spring and summer, then our garden flourishes and is a perpetual joy; for the winter we will study the MAGAZINE.

—H. J., *New Brunswick.*

This is a bad case, and if the fault is due to the condition of the house, as the friends suggest, some sanitary measures should be adopted at once and put into practice for the safety of the human inmates; but we cannot think it probable that it is much different from dwellings ordinarily, be they as they may. But with such a character as is here given to the place, we shrink from offering advice,

only this; take a plant of *Cyperus alternifolius* in a fair sized pot and plunge it in a vase of water kept standing before a window. We think this plant will maintain its health; perhaps in time some associates will gather around it.

GREENHOUSE PLANTS—AZALEA.

Please inform me if greenhouse plants raised from seed sown this spring will bloom the coming winter?

I have a single white Azalea that has been in bloom since November last. Should I cut it back and repot it now, or wait for warm weather?—Mrs. C. L. H., *Willmar, Minn.*

So much depends upon the treatment it is unsafe to say positively when perennial plants from seed will come into bloom. But there is one winter-flowering plant that with proper care will be almost sure to give its flowers early in winter, and that is the Chinese Primrose. It is so satisfactory that all that want flowers in the dull season should take special pains to raise a good stock of the plants. We can say almost, if not quite, as much for the *Cineraria*. The Azalea can be repotted when it is through flowering—probably in April or May.

NAME IN FLOWER BED.

I am very anxious to make my name in my flower garden the coming season, and cannot decide what flowers or plants will be suitable for such a purpose. I want them to be low-growing, and would like them to bear a good many flowers, or else to be of some kind with variegated foliage. I hope to receive a reply soon, perhaps in the MAGAZINE for next month. Papa says my garden soil is rich, sandy loam, and is nice to grow almost any thing in.—C. E. S., *Ravenna, O.*

The name may be made with Sweet Alyssum, and be bordered with Portulaca, or it may be made with plants of blue Ageratum, Portulaca, Double Daisy, Dwarf Coleus or *Alternanthera*, and borders of *Achyranthus*, Silver-leaved Geraniums, *Centaurea gymnocarpa*, or candida, or *Cineraria maritima*.

SHRUBS—VEGETABLE OYSTERS.

I wish to ask a few questions, and hope it will not be too much trouble for you to answer in the columns of your MAGAZINE. Are the Chinese and Indian Magnolias hardy as far north and west as Tippecanoe Co., Indiana, and if so, where can I procure them, and at what cost? Where can I get white Lilac, and what will be the cost? How old will the Chinese Wistaria have to be before it blooms? Where can I get a catalogue giving the greatest description of hardy evergreens and flowering shrubs and Roses, and color of their bloom? Are there two kinds of flowering Snowballs?

You cannot recommend the Salsify too highly, as it is more than a substitute for Oysters: tell all your readers and every one to try them.—L. A. G., *Sugar Grove, Ind.*

The Magnolias here mentioned are hardy in Indiana, and the trees, as well as the shrubs, evergreens, &c., inquired about, can be procured of nurserymen in this city, of whom the address of some appear in our advertising pages nearly every month. Chinese Wistaria frequently blooms the second year after transplanting, but more freely with increasing age. A Chinese species of Snowball, *Viburnum plicatum*, is becoming very popular; it is more difficult to propagate, and consequently costs more than the common variety.

NOTES AND INQUIRIES.

I see in the December number that W. FALCONER refers to my description of the plant *Chlorophytum Sternbergianum*. The plant came to me with a large number of others, through the mail, during severe weather in the winter of 1881, and all the other plants were frozen beyond recovery. The plant in question had a few of the leaves frozen, otherwise it was in good condition; it had a large mass of thick, fleshy roots. It is a native of Africa and Australia, and there are but few species of it. *Chlorophytum* means simply, green plant; certainly not very descriptive, and a translation of the whole name would be Sternberg's Green Plant. It is said to have been the window plant of the German Shakespeare, GOETHE, and for that reason some call it the Goethe Plant.

I wish W. F. could see my plants, particularly the one in question, although I have given off-sets from it to all my friends and their friends; it is a beautiful plant for a large hanging pot.

I have a large *Fuchsia speciosa*, very large and thrifty; it was pinched back early in the fall, all the shoots are young, and I can see no reason why it should not blossom, but it has not even produced a bud. Can you tell me the reason? Is *Pancratium coronarium* (Spider Lily,) a good window plant, and will it blossom in the house?—MRS. D. M. C., *Minneapolis, Minn.*

The Fuchsia at the time of writing the above notes had probably not had sufficient time to come into bloom.

The *Pancratiums* can be very successfully bloomed in the house. *P. rotatum* is what is usually known as Spider Lily.

RESTING A CALLA.

Please inform me what I shall do with my Calla, this summer, to give it a rest. I got the bulb from you a year ago last November. It grew and blossomed all winter, and the first of June I set it out in the garden, in a shady place, thinking it would not grow there, but instead, it grew and blossomed two or three times through the summer. In September I took it up, potted it, and removed it to a sunny bay window. It has bloomed twice this winter, and there is a large bud on it now, almost open. I have thought of putting it and *Oxalis rosea* in the cellar, this summer, but don't know as that would be the better way. Does *Dracæna terminalis* require the same treatment as *Begonia Rex* as regards moisture and heat?—MRS. J. P. L., *Centre Harbor, N. H.*

Plant the Calla, and the *Oxalis* also, in the garden again, this summer, and in the sun, not in the shade, though a better result than that of last year cannot be desired. The *Dracæna* and *Begonia* will do well in company with each other.

CROWN IMPERIAL.

Please to tell how to raise the Crown Imperial and bring it into bloom.—H. L. D., *Buckland, O.*

The Crown Imperial is a hardy bulb that only needs planting in a good soil and to be allowed to remain undisturbed. It will live and bloom year after year, and continue to make new bulbs and thrive in the same place for a long time. If it should not bloom the first or second year after planting, we should take no notice of it, but give it a longer time if it appeared vigorous.

YUCCA NOT BLOOMING.

Why does not my *Yucca*, *Y. filamentosa*, bloom? It was planted six years ago and has never bloomed, though it was expected to the year it was planted. It is in good growing condition, and I have manured it and dug around it, but it does not blossom.—MRS. S. D. M., *Corry, Pa.*

We should either move the plant and place it in poorer soil, or dig a trench around it where it stands, cutting off some of the roots, and then fill the trench with poor soil, so as to lessen its food supply.

NIGHT-BLOOMING CEREUS.

I would like to ask you what I can do to make my Night-Blooming Cereus, *Cereus grandiflorus*, bloom. It grows nicely and keeps on doing so all the time, in season and out of season, but no sign of a blossom. How can I force it to bloom? Your answer will greatly oblige—WM. W. B., *Glenwood, Mass.*

It will be best to keep it almost dry during winter. Let it go to rest in the fall by taking away the water as the heat declines; about the first of April begin to water again.

NATIVE FERNS.

A beautiful species of *Adiantum* is found on the Pacific coast, but nowhere else in this country; it is known as the California Maidenhair, which is *Adiantum emarginatum*, of HOOKER. It has frequently been sent from California and Oregon under the name of *A. Chilense*, and is probably so marked in many private collections; it was erroneously referred to this species by TORREY, and other botanists, before it was fully identi-



ADIANTUM EMARGINATUM

fied. The specimen from which this drawing was made had the bases of eight or ten stipes in close proximity to the two perfect ones, showing that it grows in tufts. The fronds are said to be from six to twelve inches in length; our specimen measures ten inches from root to tip. The stipe to the first pinna four and a half inches, and the frond five and a half. The width of the base of the frond is a little over four inches, and this is the widest part of the frond, as it tapers gradually to the extremity, having almost

a pyramidal outline. The stipes and the primary and secondary rachises, and the foot-stalks are smooth, polished, and of a rich, glossy, chestnut brown. The fronds are bipinnate, except at their upper extremities; large specimens are said to be tripinnate in the lowest part. The pinnae have sometimes an even and sometimes an odd number of pinnules.

The pinnules vary considerably in form, though that most characteristic is probably a broad fan-shaped, rounded on the upper side; the lower sides usually rise at a wide angle, sometimes being straight, and sometimes even falling or recurved, so as to make the pinnule reniform. The upper margin is finely toothed, with the veinlets running to the tips of the teeth, and extending a little beyond, so as to be almost spiny, or spinulose. The margins of the pinnules are also notched, making them lobed from two to a half dozen times, but the notch at the apex is always much the deepest, giving an appearance of division of the pinnules into two parts. It is this peculiarity that gives significance to its specific name, *emarginatum*. The pinnules are borne on slender foot-stalks; they range in size from less than a quarter of an inch to an inch and an eighth in the specimens before me, and are sometimes as much as an inch and a half in breadth; they are papery membranaceous in texture, and are only a little lighter in color on the under than on the upper side. The veins arise from the foot-stalk by two principal parts, and these equally subdivide in the longest veins four times. The fertile pinnae have long and narrow involucre across the lobes, very much lighter in color than the other parts.

The specimen of this sketch was procured near Santa Cruz, California. EATON gives the range of this species as from San Diego, California, to Oregon, remarking that it is "not rare in the coast ranges, but apparently unknown east of them." It grows among rocks and in canyons, both moist and dry. Though having no experience in the cultivation of this plant, there is no doubt but it is amenable to the general treatment required by the *Adiantums*.

One more species of *Adiantum* is found in this country, which is the Brittle Hair'.

en hair, *Adiantum tenerum*, of Florida. Its general appearance is very much like that of *A. Capillus-Veneris*, and for some time was mistaken for that species by our best botanists. It is, however, easily distinguished from it by the fact of its artic-



A. EMARGINATUM,
PINNULES NATURAL SIZE.

ulate pinnules; when the frond is old or dry the pinnules separate by a kind of joint and fall away from their points of attachment to their foot-stalks. MARY C. REYNOLDS, who collected this Fern on the Halifax River, near Daytona and Port Orange, a few years since, says, in a communication to the Torrey Botanical Club, she found it "growing in a rich hummock-land where wild Oranges and other trees made a constant shade. Little mounds, or depressions, were the haunts of my charmer. Last year's fronds were all gone, or rather the pinnæ had dropped, leaving the shining black wiry stems standing upright, and spreading out their slim fingers, while the baby fronds were coming up around them. Some were old enough to be well fruited, while others were very tender, and of a lovely pink color." This was during the first two weeks of May. The plant has also been found at Ocala, Florida, on the plantation of a Mr. WILLIAMS. It is probably quite rare. Some of our Florida friends have, at different times, sent specimens of their Ferns, but this one we have never had the pleasure of seeing. EATON says it is a common Fern in the West Indies, Bermuda, Mexico, Venezuela and some parts of South America.

VARIOUS INQUIRIES.

W. T. R., Juneau, Wis., wishes to learn in regard to the representations of dealers who offer Roses, shrubs, Currant and Raspberry plants, Grape vines, &c., that will bloom and bear the first year. No dependence can be placed on such statements, for, though a few flowers or a few berries should appear, it will be far better for the plants that they should be removed. What is needed after transplanting is growth, and not fruit or flowers, on plants that are to remain for years.

LAVER BREAD.

Laver Bread is made of a Seaweed, *Porphyra laciniata*, found growing on the low rocks. The women gather it in large baskets and carefully pick it over, wash it and take out any other sort of Seaweed that gets in with it. It is then thoroughly washed again to remove all the sand, after which it is boiled for about two hours, then chopped up with a knife, rolled into lumps and sprinkled with oatmeal to keep it together and make it look clean. It is only made along the Gower and Devonshire coasts, where a great many women earn their living by making it. After it is cooked it will keep for about three or four days in summer, and for about a week in winter. Most of it is taken to the Swansea market, for which a great deal is sent from Devonshire, where the Seaweed grows more abundantly than about Gower. It is sold at 3d, 4d and 5d per pound. The poor people are very fond of it, and eat it either fried with bacon grease, or else cooked like a vegetable with meat.—*Kew Report*.

MARLBORO RASPBERRY.

A. J. CAYWOOD & SON state that their new seedling Red Raspberry, the Marlboro, is superior to any variety known for extensive cultivation, being hardy, very prolific, of large size, delicious flavor, and sufficiently firm to bear carriage to market. In their opinion it will occupy the place in public estimation that was formerly held by the Hudson River Antwerp. It has not yet been disseminated or generally tested.

LAWN IN FLORIDA.

Bermuda is the only lawn Grass successfully raised here. It blooms, but bears no seed. It is propagated by planting the roots, cutting the ground stems into pieces three or four inches long, and planting in shallow drills, with the soil well pressed down upon them. Roots put out from every joint and soon take complete possession of the soil, making a close, firm sod.—J. L. G., *Orlando, Fla.*

LANTANA.—I find Lantana, Harkett's Perfection, a very satisfactory house plant, not subject to any insect enemies, nor with bad habits.—MRS. J. D. A., *Romney, W. Va.*

FROM THE WILDERNESS.

Yes, from the wilderness—from the heart of the Adirondacks. Look eastward. Tall old White-face looms like a giant sentinel, guarding beautiful Lake Placid in its ice-bound slumbering. The southern sky is streaked with range upon range of peaks vying with each other in their mad race to the clouds. The sun sets behind a black, dense forest, and the cruel north winds can only sigh and moan through the lofty evergreens and closely twined thicket. Dreary? No. Lonely? Not in the least. The evergreens are dotted with snow balls, the leaf-stripped Beech and Maple are loaded with ice pendants, green, scarlet, blue and orange. The ice-bound lake is dressed in pure white snow, sparkling like diamonds and sun jewels rare. The intercepting islands round beautifully on a dark blue, pink-tinted sky, and when the shadows of night are gathering, the full-faced, jolly moon peeks over White-face, just to see what is going on, and the trees dance grotesquely, and the earth snow-stars grow more sparkling. The hooting of an owl, the bark of a distant fox is heard, and then nature sleeps. Within our log house are the beauties of science, a piano, some exquisite flower chromos, VICK'S MAGAZINE on the table, plants in the window, some in glazed pots, some in butter tubs, some in tin cans; isn't this a conglomeration? But they do not care, they are all green and healthy. Not even a green fly, nor a slug, nor a spider on any one of my Geraniums, Oleander, Roses, Oxalis, &c. I have only one good French window facing south, the other two west, and my plants newly brought to this wilderness are the admiration of our neighbors some twenty miles distant. I write these few words to encourage lovers of plants who think that a fine bay window if not a greenhouse, expensive pots and lavish surroundings, are essential to flowers and to happiness, and if my experiments are of any value or of any interest, I will cheerfully give them. Meanwhile, the sun will come and kiss my flower pets while their leaves are damp with spray, and the moon, long curious to see what old Sol is about, will shyly pry through the curtains when he is gone; and when certain that Jack Frost is surely at bay, with a roaring wood fire and a bright light painting its streamers

on all and each flower in the cheery chromos, we will, with MAGAZINE in hand, earnestly pray that the "king of flowers," who has passed away, will never be forgotten, and, that the proof of his beneficent influence on our hearts will be fully given in the heartfelt and generous appreciations of his sons and successors.—"CASTLE RUSTICA."

DODDER.

Yes, I dared to throw down the gauntlet in defence of my beautiful Golden Thread, and now, Mr. J. F. J. has taken it up in behalf of botanical science. Although I had a good laugh over a portion of his remarks, yet, when I consider the the source thereof, of course, I feel very small and am frightened almost beyond the ability to fitly defend, as I long ago vowed to do, my beautiful Golden Thread when assailed.

Mr. J. F. J. kindly admits that Golden Thread (I did not originate the name,) "is a poetical one, no doubt, and probably means as much as Dodder." What an admission! It means just as much as its name implies—golden, or amber-colored, and thread-like. Then Mr. J. adds that he is "ignorant, however, of what the latter means, and would be glad of information." He'll never get it. It simply means nothing. It is the most senseless word that was ever applied to one of GOD'S lovely creations. In fact, the name seems like a desecration when one considers it is mostly made up of D's, which letter is the initial to the true name of old cloven-foot himself. Added to this thought is the fact that there is another species of *Cuscuta*, called Hell-weed! Now, that is a name that means something, with a vengeance. It is, doubtless, the true Dodder, and probably deserves all the slanders and vile epithets that have been heaped upon Golden Thread.

This is truly a comforting conclusion. And having thus arrived at so reassuring a climax, I will candidly state that in my limited acquaintance with this parasite. I have discovered no destructive habits, with one exception; when I had trained it away from a succulent *Begonia* across to a woody *Fuchsia*, near by, then, having no other resource, it twisted around the leaf-stems and twisted them off, three or four of them. But this was in the house,

and in winter, with very little sun. My first real acquaintance with it was described in Vol. III of this MAGAZINE, wherein it is shown that a large patch of weeds was covered with it in August, as with a veil of gold and amber. The weeds were of rank growth and remained unharmed until frost killed them. They were near falling water, but not near the spray, if, indeed, there was any, and I imagined that a portion of the parasite's sustenance was absorbed from the moist atmosphere, and that its long, out-reaching stems were charged to the full with the golden sunshine, and fairly gloated in the fiercest of summer suns. "Moisture and heat," thought I, "are what it needs."

The next season not a vestige of Golden Thread could be found in the vicinity. But from seeds that I had carefully matured and secured, I raised some plants. Those put in a hanging basket of succulent plants soon covered the whole with glossy shoots, to the wonder and delight of all who saw it. Thus it will be seen that in my limited experience with this ethereal plant it developed no propensity for "killing other plants in order to feed itself."

Even our domineer, who had dived into the earth and thrust his head among the stars, so to speak, fairly absorbing knowledge from every thing between the two regions, had never before seen this charming parasite, and he suggested taking a text therefrom. Not that it sapped the life of the plant on which it thrived, O, no, but because it was at first of the earth earthy, but soon reaching upward, it had fast hold on a higher life, and gathering strength therefrom severed its connection with the grosser element below. And this is where "the beautiful lesson for all mankind" comes in.

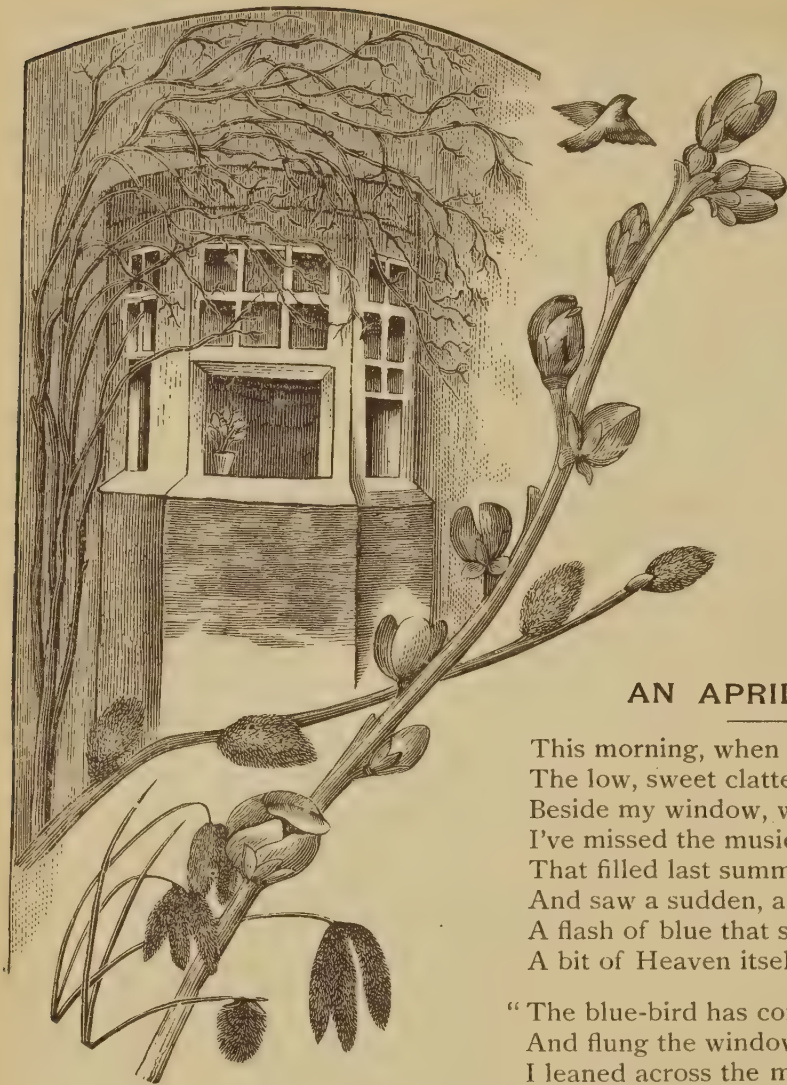
In September, 1881, some beneficent influence or fairy-magic had dropped a bit of this ethereal plant into a certain garden in Woodstock, Ont., and surprised the wondering owner thereof into questioning our editor about it. If his reply reached her at eventide, she certainly could not have slept a wink until, by the light of a lantern, she had torn away every shred of the most curious and beautiful thing in her garden. The editor's last remark in answer to her, was, "It is interesting but pestiferous." Of course, Mr. JAMES and the editor can now enjoy

an imaginary hand-shake over this, the while I am saying to myself, "it is Hell-weed, probably, that they have both been talking about," and it is not so baleful after all, if it have the quality of stirring up a facile pen occasionally for the benefit of the MAGAZINE readers.—MRS. M. B. B.

LEAF FREAK—PROLIFIC PLANT.

In the February number of your MONTHLY I read "Freaks of Plants," with an account of the double Calla. I have just a match for that plant, and it has been very interesting to me. My Calla has also a flower, and is very thrifty. I here enclose the peculiar organ, it is a leaf double from the stem clear up to the tip, two leaves growing together on the midrib, so showing four sides.

I will also describe here a wonderful yield of seeds of one Tobacco plant, and I think it will astonish a great many of your readers. Last spring, a friend of mine requested me to raise him some Tobacco plants in my greenhouse, as he wanted them early; he handed me some seeds, but I did not know the variety. I let him have the plants when large enough. A few small plants were left, and a little later I set one of them out in my garden. It proved to be very ornamental and showy; it grew about six or seven feet, and was full of flowers all summer. I gave no attention to it and let it go to seed. In the fall I wondered at the immense number of branches with seed pods, which I cut off and took in the house to ripen more perfectly. This winter, I let my children take out the seeds which they received on a newspaper, simply breaking the seed pods with their fingers. Now, this operation was not performed with care, and a great deal of the seed was spilled, and a great deal of it had also fallen out when it laid on a bench to dry, besides a good many stems were left on the plant with flowers still on, and some quite green seed-pods. I had a cup full of seeds, which I had weighed by a druggist, and its weight was three ounces. I took two grains of it and counted the seeds, and by accurate calculation found the whole to contain 1,235,520 seeds. All this was from one seed, besides the seeds that were lost. Why has nature provided this plant with so many seeds?—O. S., *Gravesville, Wisconsin*.



AN APRIL MORNING.

This morning, when I woke, I heard
The low, sweet clatter of a bird
Beside my window, where so long
I've missed the music of the song
That filled last summer with delight,
And saw a sudden, arrowy flight,
A flash of blue that soars and sings,
A bit of Heaven itself on wings.

"The blue-bird has come back," I cried,
And flung the window open wide ;
I leaned across the mossy sill,

And heard the laughing little rill,
That comes but once a year, and stays
Through the brief round of April days ;
Then, when its banks with bloom are bright,
It seems to vanish in a night.

The old spring gladness filled the air,
I saw it, felt it, everywhere ;
The sky was bluer, and a tint
Of color, that was but a hint
Of "green things growing," greeted me
Along the willows by the lea,
And I could almost feel and hear
The quickened pulses of the year.

A warm south wind that seemed a draught
Of wine, the sweetest ever quaffed,
Blew round me, bringing balmy smells
That made me dream of Pimpernels,
And pink *Arbutus* by the brooks,
And I was happy as the bird
Whose heart with spring's swift joy was stirred.

—EBEN E. REXFORD, *Shiocton, Wis.*

GARDEN NOTES.

Garden enjoyment is by no means confined to the season of flowers and fruits, or to the pleasure of seeing their beautiful colors. There are pleasures of the physical senses, when the mind can also be pleasantly occupied, so that thought and contrivance accompany light, unfatiguing movement of the muscles, the utmost satisfaction is attainable, and time passes on lightest wings. The training of plants into unusual forms that shall please by their neatness, or excite by their novelty, or gratify by their more abundant fruitfulness is of this kind. It is an art that consists in little more than guidance, and a child may practice it and find delight in it, if shown where and when to begin. But the effects are extreme and surprising, and are soon reached if no violence is done to growth. By simply leading the shoots as they grow along rods or wires bent into the desired form, the initials of a name or the figure of a date may be formed, or a bower, an umbrella, a spiral, a fence, a railing, or almost any diagram may be imitated. The pinching to check superfluous shoots and throw all the growth along the lines wanted is something to occupy the eyes, fingers and thoughts through all the growing season. The training of fruit trees and Grape vines can be made profitable through securing finer fruit, and every year's experience will add to the skill of the trainer and the interest taken in the work as a means of recreation.

To have the lovely and fragrant little May Flower, Trailing Arbutus, Ground Laurel, *Epigæa repens*, growing at home is the desire of every one who meets with it in April or May, in cool, damp woods, or on the shady side of slate or sandy hills. To succeed with it its nature must be understood. No more acceptable gift can well be made to a lady friend confined to the house in the clear weather of early spring than one of these plants. It must be taken up in the fall or early winter, and kept in a cool cellar, rather damp, where any wounded roots will have time to heal by callousing. Take a deep pot to the plant, lift it with a good ball of its native soil, and leave about three inches of space in the top of the pot for leaves and flowers under the pane of glass which is to be laid on to preserve

moisture. A plant not much branched is best. Keep it cool even in the room where you will place it to bloom, and water well then; flowers will soon appear from the leaf axils. After it has bloomed it can be set out in a cool, shady place, to be potted again in the ensuing fall. There should be no lime in the soil it is set into.

Evidently the wood and buds of Grape vines suffer winter injury more from drying than from intensity of cold. For when we lay them flat upon the surface of the soil, weighted down so as to be close to it, the wood is exposed, in the absence of snow, at least, to quite as extreme cold as if it were up on the trellis. Yet even in open winters this mere pressure upon the bosom of mother earth, cold as it may be, suffices to save the wood and crop. An exposed vine when injured scarcely ever betrays any apparent evidence of the injury by discoloration or shrinkage; the first evidence of it appearing in the failure of the buds to open, while other unhurt vines have expanded their leaves and are making growth. But these tardy buds open, too, after many days, showing that the only difficulty was a drying of the wood and buds, which is eventually relieved as the pressure of sap from the roots, under the genial warmth and moisture of the spring time, gradually expands and fills the unbroken cells. But this loss of time is fatal to the proper ripening of the crop. Even the well varnished wood and buds of the Concord sometimes suffer from this winter drying and spring retardation, although generally proof.

A writer who advocates complete intermixture of pistillate and staminate sorts of Strawberries, instead of having a row or hill here and there of the latter, says that he has satisfied his own mind that Strawberry pollen is not distributed much more than twelve to twenty inches from the flowers, (yet he refers to insects carrying it,) and gives us an example of successful intermixture, the Charles Downing and the Crescent running together. But both of these are held to be pistillates. Both are bearing in the present writer's garden and where they run together, as they do at one point, or where vigorous staminate run among them no greater fruitfulness has been observed than where they are many rods away.

from any other sort. Either they have stamens too minute to be readily seen, which supply enough of pollen, or bees bring it from quite a distance; or else the berry swells and develops its pulp even when no seeds are fructified. This takes place in other fruits, as in seedless Pears, Grapes, &c., and may occur, one may suppose, quite as perfectly in the Strawberry.

MR. GRANT ALLEN, in a late paper of his, traces the steps by which, as he supposes, the Wheat plant has been gradually evolved from an original low-formed Lily, and also through Rushes and Grasses to Wheat. The first improvement must have been made by insects, and wind interplacements of pollen. The perfected Wheat has become a self-fertilizing plant, and now the utmost art of man becomes a requisite, and is employed for further improvement of the most valued of all esculent Grasses by artificial crossing.

Prof. JOHN G. LEMMON and his wife, while botanizing for some months on the mountains of the Mexico-Arizonia frontier, found wild Potatoes in high mountain meadows, and brought a liberal supply of tubers large as walnuts, and also ripe seeds for distribution to those who will engage to cultivate the stock for six or eight years. It is to be hoped that these seeds will fall into patient, careful and faithful hands, for the great revival of this invaluable esculent twenty-five years ago, through the resort to crossing with the wild stock, justifies sanguine expectations of the practicability of further advances being made in the same line. The Potato seems to require renewal through fresh seed oftener than any other of our cultivated plants.—W.

SMELLAGE.

Is there a plant called Smellage? If so, is it in any way related to the Celery plant? Please answer in your next MAGAZINE.—R. W. C., *Medina, O.*

Smellage is another name for Lovage. It is a plant originally from Europe that has been cultivated to some extent in gardens. Its botanical name is *Ligusticum Levisticum*. It is related to Celery only so much as both are members of the same order of plants, the Umbelliferæ, unless it be that the fragrance of both is thought by some to be the same or nearly so. It is raised, perhaps, for curiosity, as there is no use made of it.

A PEST.

Can any of the readers of the MAGAZINE tell me how to get rid of perennial *Cacalia*? A friend sent me some plants a few years ago, and the seed blew into the lawn and has nearly rooted out the grass. It seems to thrive well when moved frequently, instead of being killed like most weeds, and when spaded up always keeps enough fibers to claim residence.—N., *Brookfield, N. Y.*

A NEW WAY WITH CELERY.

Last fall, when I had taken up and trenched nearly all of my Celery, we had a heavy freeze, and all the tops of the plants still standing froze so badly that I cut off all the leaves that had been exposed, and then placed them in the trenches, and I find the Celery I cut the leaves from keeps far better than that with them on.—H. F. I., *Bedford, Pa.*

REST FROM BRAIN WORK.

An active writer makes the following note: "The sweetest rest from writing and brain work is among plants, and books which tell of plants, and your MONTHLY is next thing to having a garden and being in it."

ADVANTAGE TO THE WHOLE.

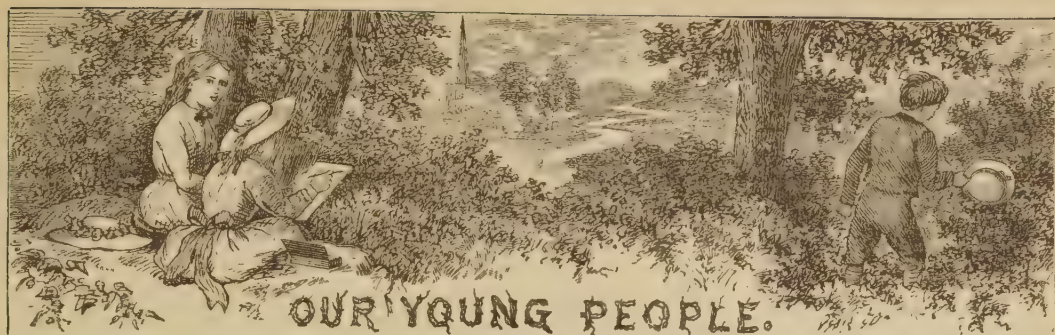
The price of the MAGAZINE is so low we think we are doing good service to horticulture in enlarging our subscription list, and thus extending its usefulness. One home in a neighborhood made better by its influence is an advantage to the whole community. We trust our friends will all be public benefactors by taking new subscribers, and giving them the benefit of clubbing rates.

ASK YOUR FRIENDS.

We should be pleased to have the assistance of any and all of our readers in increasing our circulation, and shall esteem it an especial favor to have the numbers of the MAGAZINE shown to those who might be interested. Specimen numbers will be sent when desired.

SUBSCRIBE NOW.

The MAGAZINE for the rest of this year, including the April number, will be sent to single subscribers for ONE DOLLAR. If the first three numbers should be wanted, they can be had at any time for TWENTY-FIVE CENTS additional.



AUNT WESTON'S VISIT.

II.

After the Millburn girls had put their heads together, as girls will, and had talked Mrs. Weston and her ideas all over, they had decided with much emphasis that they were going to like her "immensely," even if she was different from some ladies of a set type whom they knew. Then they went straightway to their father, with whom they had a long talk, and ended it by asking him if he were not proud of his sister.

One morning not long after this, the three girls took possession of Mrs. Weston, and Annie opened the conversation by saying :

"Aunt Weston, we girls have been talking over, to ourselves at different times, your revelation to us of the lack of anything 'real' in our house, until we can hardly see anything around us that is not artificial."

"Please don't include me," said Alice, "in such a sweeping assertion as that; this solid chair, for instance, is very real, I'm sure."

"Did it grow in that shape?" inquired Mrs. Weston, "and when it gets old will another grow in its place?"

"Well, of course not. But isn't it a real chair?"

"It is real in that sense which is opposed to the *ideal*—but not in the sense opposed to the artificial—except its framework, which is of wood, real black walnut, I trust. The marble of the mantle is a natural production, and therefore real, though its formation is artificial."

"That mantle," chimed in Alice, "is altogether artificial, for it is marbled iron, though papa says that it really imitates a kind of marble quite perfectly; and that is why you were deceived. He got this because he thought we girls pre-

ferred it on account of its beautiful finish."

"To change the subject," said Ethel, "I would remark that our floral education has certainly been neglected. We did not care for the study of botany with its hard names, and were allowed to skim over it by our governesses, who neither one cared to bother with plants. When we were younger our grandmamma was too busy too look after plants; and now-a-days we take about as much care of her as she does of us, especially Annie, who sleeps in a room adjoining hers with the door ajar."

"Yes, I have noticed how tenderly you all care for her," said Mrs. Weston, "and shall not soon forget it. I see you always keep cut flowers in her room, which is a very delicate attention."

"Yes," answered Ethel, "our florist has a standing order to send fresh ones three times a week. Besides that, we have an arrangement with him to supply us with fresh-blooming pot plants for our 'Thursdays' when we 'receive.' We have a set of screens which we place the pots in as we arrange them in different parts of the rooms. Sometimes there is a succession of bloom that lasts over two Thursdays; but the florist's man says the plants are the worse for wear by that time, and he whisks them off in a hurry, you may be sure. Occasionally we have rare blooming plants that are splendid enough for a palace; but we might almost as well buy them as pay the price we do for having them for a day or two at a time. But everybody has cut flowers, and we were determined to have uncut flowers, besides, papa enjoys them as much as anybody, and —"

Then spoke Alice: "Ethel, suppose you let me get in a word about this time. I want you to know, Aunt Weston, that

on these days we have grandmamma dressed up 'in state' for the occasion, and she seems as bright as any of the young people about her. Having always been accustomed to this kind of life she considers it essential that we become speedily initiated in all the ceremonials of society. And she has been a great help to us indeed."

"And now then," said Annie, "if Alice will permit, I should like to resume where I left off, and remark that we girls have talked over some of your ideas with papa, and he thinks they are correct. After a little further talk he inquired if we would like to have a conservatory. After thinking a moment, I said, yes, if we could have it stocked with wonderful exotics, both new and rare to the amateurs in this part of the world, with a professional man to keep it in perfect order."

"What did he say?"

Anna smiled and hesitated—then Alice broke out, "Why, he inquired if a special importation from the South Sea Islands, India, and Africa would satisfy her; and if her 'professional' could also act as hostler and coachman, for there would hardly be employment for two men. And now while I've got the floor I want to ask if my Sea-Onion is not an exotic; for the girls have more than hinted that it could never have a place in the conservatory."

Mrs. Weston only smiled, while Annie resumed, "And so, auntie, I thought we'd leave the decision to you." But the answer was only this:

"Girls, each time I notice the beautiful bay window in your dining room, with its ample space and southern exposure, I think of the charming possibilities awaiting some developing hand."

"Where do you imagine the developing hand is to coming from?" inquired Alice, mischievously.

Thus challenged, Mrs. Weston answered, "From you, perhaps. You can begin with your Sea-Onion." While the girls were still laughing she resumed,

"I would think it a good idea to begin with a plant or two and a climbing vine, perhaps, until you find whether you can grow a few successfully. After that it would be soon enough to secure a few fine plants by degrees, as your success should warrant. In many families such

an arrangement gives more real pleasure all around than a conservatory; and I would think that with you three girls here it might prove so in this case. Let us go out to the dining-room." Then after having repaired to the bay window, Mrs. Weston resumed: "Now, right here, in this central position, I think that in time you'll have an aquarium. It would be an unceasing source of amusement, and instruction as well. One of you could take the management so that regular care could be secured, and its occupants changed, as many more desirable varieties might —" but here one of the serving girls came rushing in and brought herself to an abrupt stand. Finally she found voice and said:

"Miss Millburn! they's two barefuttled spalpeens outside wid some swamp wades they're bound to show the ladies; will I bid 'em be gone?"

"Swamp weeds," repeated Ethel. "Annie, let's have them come in." So directly there appeared two urchins with pants rolled up to their knees, and their feet and ankles smoothly coated over with marsh mud. Instantly Ethel exclaimed:

"O, here are some Iris blossoms!"

"O, no!" exclaimed the honest fellow, "them's nothing but Flag posies. You see me and him—(he's Jake, you know, an' I'm Dick,) well, we've often seen things pictered out in the show windows like them that grows in swamps; an' this mornin' I thought I'd go an' git some Cal'mus to chaw; kase terbaccer costs like all tarna—likè all forty; an' I asked Jake here to go along, an' we found these, an' I thought mebbby we could sell 'em; but p'raps you gentry folks don't keer for sich like."

"Yes, we do keer for sich like," said Alice, as she stood slipping a finger through the curve of a petal.

Then Mrs. Weston called the quiet Jake to her—before he should have bored his toes quite through the carpet—and, reaching for a bunch of blades, inquired what he had, but instantly exclaimed, "This is Sweet Flag! isn't it?" Then Dick spoke up, "So you're a Yank, too! That's what he call's it,"—bobbing his head at Jake—"an' he's a Yank."

"Don't you think," asked Annie, "that you are talking rather rudely to a lady?"

"Am I? By jing! I didn't mean it, kase

I want to sell posies to some of you folks."

"Well, if that's what you want," said Ethel, "talk with me a minute. Sit down on the steps here, both of you. Are there any Cat-tails in your marsh?"

"Gosh! I wish there was. But they's lots of cur'ous grass, an' reeds, an' snakes, an' sich."

"Dick, you must answer my next question without saying a rough word. Are there any fine, large dragon-flies there?"

"Lots of 'em. Skeeters, too."

"Dick, are there any storks around that marsh? And, listen! did you know that they are to stand on two legs this year?"

"I s'pose you're gitting up a sell on me; any way I aint seed no storks; 'less it was kase I didn't know 'em, bein' they was standin' on two legs."

Then Alice said, "You've got the sell on me, I fear. Now, one more question. I never heard of a real marsh within ten miles of the city. Will you tell us where this one is?"

"It's only a mile, and at the left of the south shore road; it's just hid by a row of tall bushes and things."

"Could you two boys be there about four o'clock this afternoon if we should drive out?"

"You bet!"

"Now, Dick, let me tell you something. I have taken a great fancy to your honest face and frank speech, but not to your rough phrases, and I would like to help you in some way."

"And I," said Annie, "have taken a liking to quiet Jake," (at which remark a gleam of delight shot from his eyes), "and if Ethel consents, we will have you meet here at such times as we shall decide upon."

Of course Ethel consented. Annie brought money and paid them for their flowers, and Alice said that it was likely they should soon start an aquarium and should need them to help stock it; saying, with a flourish of the hand, that she presumed they should soon make that wilderness of a bay window to blossom as the rose! Then as the boys left she pretended to weep and to wail because she had no small arab to expend her surplus benevolence upon. Ethel advised her to turn her attention to her Sea Onion.

Mrs. Weston said little, but her heart

was full of a secret delight growing out of these small beginnings in the right direction.—AUNT MARJORIE.

ANOTHER MICROSCOPE.

Like JIMMIE, I have a microscope, and want to write you about it, for since I received it, Christmas, I have wondered how I happened to go without one so long. What treasures it has shown me, and what haven't I examined with it? Lots of things I expect I shall find out, this summer, but I have used it faithfully for the winter wonders. I am busy as can be most of the time, but when one wants to do any thing very much, I have found out that there is a way, so by using my spare minutes, I have pretty thoroughly examined the Mosses and Lichens that grow about here, and some pressed California Ferns that I have, stones, bugs, worms, caterpillars, mosquitoses, Sea Mosses, and in fact, almost every thing I have happened to find. I have learned more about Mosses than I ever knew before, and am wanting so much to learn enough to analyze the Cryptogams. Since examining the Sea Mosses I have wondered if they were named and classified like the land Mosses. One kind I looked at was like the Sea Coral, only the ends tapered off into slender, branching stems, which were smooth and almost transparent. If I were an artist, like JIMMIE, I would try to show how a worm appeared through my microscope; it was just awful. I looked at it until it moved and then couldn't stand it any longer.

"Our Young People" will never want to hear from me again if I don't stop soon, and as I want to learn some things through the MONTHLY when I get to botany work, this spring, I will say, good-bye, hoping to ask my questions another time, and not impose on any one's good humor.—F. C. B.

[With a camera lucida attachment to the microscope it is quite easy to make correct drawings of objects seen through the glass; every microscope should be fitted with one, which is a very simple affair. The Sea Mosses, or Algae, are classified and named with as much accuracy as other vegetation. We shall be pleased to hear from our young friend when the "botany work" is commenced.]

SNOWDROP.

Simple Snowdrop! then in thee
 All thy sister train I see;
 Every brilliant bud that blows,
 From the Blue-bell to the Rose;
 All the beauties that appear
 On the bosom of the year;
 All that wreath the locks of spring,
 Summer's ardent breath perfume,
 Or on the lap of autumn bloom,
 All to thee their tribute bring—
 Exhale their incense at thy shrine,
 —'t their hues, their odors, all are thine.

—MONTGOMERY.



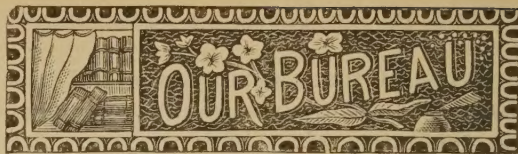
We are happy to give extracts from the very first letter received in response to "A Letter" to "Our Young People," and published in the February MAGAZINE. No wooden girl about this letter. It was certainly written by one who is wide-awake and means business. We would have been glad if she had sent her full name and age. She writes:

My mamma is a great lover of flowers, and I am myself. We have a great many plants in the summer, and a good many house plants. This has been a hard winter on house plants. We have lost several of ours by freezing. Among them was a Fuchsia that measured eight feet, with several buds just ready to bloom. Mamma cut it off six inches from the ground, and now it is sending up bold sprouts from the roots. I had a Tuberose, which my school teacher gave me, and it was just ready to bloom when it froze, too. I could write ever so much more, but will stop for this time.—LITTLE I. M. P., Box 176, Attica, Ind.

All the members of your club are entitled to a hearing in the MAGAZINE, as intimated by the editor. We are glad you had a school teacher who was a "flower-lover," too, and think you must be surrounded by excellent influences.—AUNT MARJORIE.

YOUNG LETTER WRITERS.

AUNT MARJORIE's little friends shall all have a hearing, and they can communicate directly with her by addressing their letters, "AUNT MARJORIE," Box 528, Xenia, Ohio. They can ask her questions, or tell her what they would like to know about, and we are sure it will be found very pleasant for all of them. Our new heading above shows that AUNT MARJORIE expects to hear from them.



HORTICULTURAL MEETINGS.—The Horticultural Society of Worcester County, Mass., has held weekly meetings during the past year, and this course proves far more satisfactory than an annual gathering and exhibition. This Society is one of the most flourishing in the country. There are very few places of any size where horticultural societies holding meetings one evening in a week could not be made very pleasant and profitable. The ladies, the gentlemen and the older children should attend, and all try to contribute something of interest. Everywhere where there are gardens and lawns, where fruits or flowers are raised, or where plants grace the windows, those interested in this pursuit should associate for mutual encouragement and improvement. From what quarter shall we hear of the first new organization of this kind? If informed, announcement will be made in these columns.

VERMONT AGRICULTURE.—The last (seventh) Report of the Vermont State Board of Agriculture contains several valuable papers; but the most noticeable feature is a Flora of the State, "believed to be tolerably complete." This Flora has been prepared by Dr. GEO. H. PERKINS, of the University of Vermont. Students of botany in Vermont and New Hampshire might derive much assistance from it. The papers contributed by the Secretary, Dr. H. A. CUTTING, are particularly worthy of notice, as well as a number of essays by other writers, all of which are able.

APPLETON'S HOME BOOKS.—A number of small volumes, each of 125 to 150 pages, constitute a series treating on quite a variety of subjects pertaining to home, house and grounds. They are valuable manuals for what they actually contain, and still more for what they suggest. Among them are the Home Garden, Home Grounds, Building a Home, How to Furnish a Home, Home Occupations, Amenities of Home, and others. Each volume is by a different author, and there is not a poor one among them. The books are bound in uniform style in flexible cloth, and are sold at sixty cents each.

THE LAST POLAR EXPEDITION.—The narrative of the Jeannette Arctic Expedition, as related in the work entitled "Our Lost Explorers," lately issued by the American Publishing Company, of Hartford, Conn., is of romantic and thrilling interest. The full account of the voyage and cruise of the Jeannette until she was crushed by the ice and finally sunk in the Arctic Ocean, is given by the survivors, with all the details of their escape after the severest sufferings, the death of Captain DeLONG and his companions of the first cutter, with the exception of two, the fate of Lieutenant CHIPP and his seven companions of the second cutter, and also the burning of the relief steamer Rodgers, and the fates of its officers and crew. RAYMOND LEE NEWCOMB, the Naturalist of the expedition, is the reviser of the account, and his descriptions are most vivid of all the events of the expedition, of the Lena and its Delta, of Arctic Siberia, the native and exiled inhabitants of the country, and of his winter overland journey from the Arctic Ocean to St. Petersburg. The arrangement of the work is excellent, and it is very fully illustrated, making a handsome volume of 480 pages. Price, three dollars.



CISSAMPLOS LANCEOLATA